

# Music At The Planck Scale

The Perimeter Institute Orchestra

Barak Shoshany, 2018

Tempo follows LHC beam energy upgrades over time

**A**  $\text{♩} = 102$  **10** **4**  
1-10 11-14

**B**  $\text{♩} = 111$  **5**  $\text{♩} = 120$  **3** **8**  
15-19 20-22 23-30

$\text{♩} = 115$  **4** **C**  $\text{♩} = 111$  **10**  
31-34 35-44

$\text{♩} = 93$  **3** **D**  $\text{♩} = 115$  **5**  
45-47 49-53

**E**  $\text{♩} = 115$  accel.  
54-56 *p*

61  $\text{♩} = 125$   
*f*

65  $\text{♩} = 115$

**F**  $\text{♩} = 127$  **3** **6**  
69-71 72-77

78 **G** ♩ = 135 accel.

Musical staff 78-83: Treble clef, 3/4 time signature. Measures 78-83. Dynamics: *ppp* (measures 78-81), *pp* (measures 82-83). Includes triplet markings.

Musical staff 84-88: Treble clef, 3/4 time signature. Measures 84-88. Dynamics: *p* (measures 84-85), *mp* (measures 86-88). Includes triplet markings.

Musical staff 89-94: Treble clef, 3/4 time signature. Measures 89-94. Dynamics: *mf* (measures 89-90), *f* (measures 91-92), *ff* (measures 93-94). Includes triplet markings.

Musical staff 95-99: Treble clef, 3/4 time signature. Measures 95-99. Dynamics: *fff*. Includes triplet markings. Tempo marking: ♩ = 140 ritard.

Musical staff 100-102: Treble clef, 3/4 time signature. Measures 100-102. Dynamics: *p*. Includes a fermata over measures 100-101. Section marker **I** ♩ = 102. Measure numbers 103-112 are indicated below the staff.

Musical staff 113-128: Treble clef, 3/4 time signature. Measures 113-128. Dynamics: *p* (measures 113-118), *mp* (measures 119-128). Section marker **J** ♩ = 123 accel. Measure numbers 113-118 and 119-128 are indicated below the staff.

Musical staff 132-158: Treble clef, 3/4 time signature. Measures 132-158. Dynamics: *mf*. Tempo markings: ♩ = 135 (measures 132-146), ♩ = 102 (measures 147-158).

Musical staff 139-154: Treble clef, 3/4 time signature. Measures 139-154. Dynamics: *mf*. Section markers **K** ♩ = 102 accel., **L**, and **M**. Measure numbers 139-146 and 147-154 are indicated below the staff.

Musical staff 161-168: Treble clef, 3/4 time signature. Measures 161-168. Dynamics: *mp* (measures 161-166), *f* (measures 167-168). Measure numbers 161-168 are indicated below the staff.

**N** ♩ = 114 accel. **O**  
8  
171-178

186 **P**

191

196 **Q** ♩ = 125 accel. **5**  
198-202

205 **R**  
*mp*

209

212

**S** ♩ = 131 accel. **3**  
214-216

217 *mf* **2** 219-220

222 **T** *mf*

226 *mf*

230 **U** *f*

234 *mf*

239 *mp* **V** ♩ = 142 accel. *f*

244 *ff* *fff*

249 **W** ♩ = 145 accel. **10** 250-259 *mp* *mf*

265 **X** ♩ = 151 accel. *f* *mf* *f* *ff*

271 *8<sup>va</sup>*

*fff*

**Y** ♩ = 119   ♩ = 105   **Z** ♩ = 99

276-278   280-288

*mf*   *f*

292

*ff*   *mf*

297   ♩ = 65

*f*   *ff*

# Music At The Planck Scale

The Perimeter Institute Orchestra

Barak Shoshany, 2018

**A** ♩ = 102  
6  
1-6  
*pp*

Tempo follows LHC beam energy upgrades over time

11

**B** ♩ = 111  
*pp*

20  
♩ = 120  
*p*

26

31  
♩ = 115

**C** ♩ = 111  
6  
35-40

41

*p*

45

*p* *mp* ♩ = 93

49

*p* **D** ♩ = 115

54

*p* **E** ♩ = 115 accel.

60

*f* ♩ = 125

65

*p* ♩ = 115

69-71

*ppp* **F** ♩ = 127

72-77

*pp* **G** ♩ = 135 accel.

82

*p* *mp*

88

*mf* *f* **H**

93  $\text{♩} = 140$  ritard.

*ff* **3** **3** **3** *fff*

Detailed description: Musical staff 93-97. Treble clef, key signature of three sharps (F#, C#, G#). The staff contains six measures. The first three measures feature eighth-note triplets, each marked with a bracket and the number '3'. The first measure is marked with a dynamic of *ff* and the last measure with *fff*. The tempo is marked as  $\text{♩} = 140$  ritard. The notes in the triplets are G#4, A4, and B4.

98

*p*

Detailed description: Musical staff 98-102. Treble clef, key signature of three sharps. The staff contains five measures. The first measure has a dotted quarter note G#4. The second measure has an eighth note G#4 followed by a quarter note A4. The third measure has a quarter note B4. The fourth and fifth measures are whole notes G#4 and A4, respectively, with a dynamic of *p*. The piece ends with a double bar line and a key signature change to two flats (Bb, Eb).

**I**  $\text{♩} = 102$

**10** **6**

103-112 113-118

Detailed description: Musical staff 103-112. Treble clef, key signature of two flats. The staff contains two measures, each marked with a dynamic of *ff*. The first measure is marked with a bracket and the number '10', and the second with '6'. The tempo is marked as  $\text{♩} = 102$ . The piece ends with a double bar line and a key signature change to three sharps (F#, C#, G#).

**J**  $\text{♩} = 123$  accel.

**8**

119-126 *p* *mp*

Detailed description: Musical staff 119-126. Treble clef, key signature of three sharps. The staff contains eight measures. The first measure is marked with a dynamic of *p* and a bracket with the number '8'. The tempo is marked as  $\text{♩} = 123$  accel. The dynamic changes to *mp* in the final measure. The piece ends with a double bar line.

132  $\text{♩} = 135$   $\text{♩} = 102$

*mf*

Detailed description: Musical staff 132-138. Treble clef, key signature of three sharps. The staff contains seven measures. The first measure has a dotted quarter note G#4. The second measure has an eighth note G#4 followed by a quarter note A4. The third measure has a quarter note B4. The fourth and fifth measures are whole notes G#4 and A4, respectively, with a dynamic of *mf*. The tempo changes from  $\text{♩} = 135$  to  $\text{♩} = 102$  at the start of the fourth measure. The piece ends with a double bar line and a key signature change to two flats.

**K**  $\text{♩} = 102$  accel.

**4**

139-142

Detailed description: Musical staff 139-142. Treble clef, key signature of two flats. The staff contains four measures, each marked with a dynamic of *ff*. The tempo is marked as  $\text{♩} = 102$  accel. The piece ends with a double bar line.



143

Musical staff 143: Treble clef, key signature of three flats (B-flat, E-flat, A-flat). The staff contains a sequence of notes starting with a half note G4, followed by quarter notes A4, B-flat4, C5, D5, E5, F5, G5, and a whole note G5.

*pp*

147

**L**

Musical staff 147: Treble clef, key signature of three flats. The staff contains a sequence of eighth notes with stems up, starting on G4 and ascending to G5.

*p*

151

Musical staff 151: Treble clef, key signature of three flats. The staff contains a sequence of eighth notes with stems up, starting on G4 and ascending to G5.

155

**M**

Musical staff 155: Treble clef, key signature of three flats. The staff contains a sequence of eighth notes with stems up, starting on G4 and ascending to G5, with some notes beamed together.

*p*

160

Musical staff 160: Treble clef, key signature of three flats. The staff contains a sequence of eighth notes with stems up, starting on G4 and ascending to G5, with some notes beamed together.

165

Musical staff 165: Treble clef, key signature of three flats. The staff contains a sequence of notes, including quarter notes and eighth notes, with some notes beamed together.

*mp* *f*

**N** ♩ = 114 accel. **O**

Musical staff 171-178: Treble clef, key signature of three flats. The staff contains a sequence of notes, including quarter notes and eighth notes, with some notes beamed together.

171-178

*mp*

183

Musical staff 183: Treble clef, key signature of three flats. The staff contains a sequence of notes, including quarter notes and eighth notes, with some notes beamed together.

187

**P**

Musical staff 187: Treble clef, key signature of three flats. The staff contains a sequence of notes, including quarter notes and eighth notes, with some notes beamed together.

191

Musical staff 191: Treble clef, key signature of three flats. The staff contains a sequence of notes, including quarter notes and eighth notes, with some notes beamed together.

194

**Q** ♩ = 125 accel.  
4  
198-201 *p*

**R**  
4  
206-209 *p* *mf*

214 **S** ♩ = 131 accel.  
*mf* 5  
217-221

222 **T**  
*mf*

226  
*mf*

230 **U**  
*f*

234  
*mf*

239 **V** ♩ = 142 accel.  
*mp* *f*

244

*ff* *fff*

249

**W** ♩ = 145 accel.

8

250-257

*mp*

261

*mf* *f*

266

**X** ♩ = 151 accel.

*mf* *f* *fff*

271

8<sup>va</sup>

*fff* *f*

**Y** ♩ = 119    ♩ = 105

3

276-278

2/4 - 4/4

9

280-288

**Z** ♩ = 99

*mf* *f*

292

*ff* *mf*

297

♩ = 65

*f* *fff*

# Music At The Planck Scale

Clarinet in B $\flat$

The Perimeter Institute Orchestra

Barak Shoshany, 2018

**A**  $\text{♩} = 102$  **10** **4**  
Tempo follows LHC beam energy upgrades over time  
1-10 11-14

**B**  $\text{♩} = 111$  **5** **3**  
15-19 20-22

23  $\text{♩} = 120$   
*p*

29  $\text{♩} = 115$

35 **C**  $\text{♩} = 111$   
*p*

41 *p*

45  $\text{♩} = 93$   
*p* *mp*

**D**  $\text{♩} = 115$  **5** **3**  
*p* 49-53 54-56

57 **E** ♩ = 115 accel.

Musical staff 57-63: Treble clef, key signature of two flats. Measures 57-63. Dynamics: *p* (measures 57-60) and *f* (measures 61-63). A horizontal line spans from measure 57 to 63.

64 ♩ = 125    ♩ = 115

Musical staff 64-71: Treble clef, key signature of two flats. Measures 64-71. Includes a key signature change to three sharps at measure 69. Dynamics: *pp* (measures 69-71). A horizontal line spans from measure 64 to 71.

**F** ♩ = 127

**6**

**G** ♩ = 135 accel.

Musical staff 69-77: Treble clef, key signature of three sharps. Measures 69-77. Time signatures: 7/8 (measures 69-71), 4/4 (measures 72-77). Dynamics: *ppp* (measures 69-71) and *pp* (measures 72-77). A horizontal line spans from measure 69 to 77.

82

Musical staff 82-87: Treble clef, key signature of three sharps. Measures 82-87. Time signatures: 4/4 (measures 82-84), 3/4 (measures 85-86), 4/4 (measures 87). Dynamics: *p* (measures 82-84) and *mp* (measures 85-87). Triplet markings are present over measures 82-84 and 85-87.

88

**H**

Musical staff 88-92: Treble clef, key signature of three sharps. Measures 88-92. Time signatures: 3/4 (measures 88-90), 4/4 (measures 91-92). Dynamics: *mf* (measures 88-90) and *f* (measures 91-92). Triplet markings are present over measures 88-90 and 91-92.

93

♩ = 140 ritard.

Musical staff 93-97: Treble clef, key signature of three flats. Measures 93-97. Dynamics: *ff* (measures 93-95) and *fff* (measures 96-97). Triplet markings are present over measures 93-95.

98

Musical staff 98-102: Treble clef, key signature of three flats. Measures 98-102. Dynamics: *p* (measures 98-102). A horizontal line spans from measure 98 to 102.

**I** ♩ = 102

**10**

**6**

Musical staff 103-118: Treble clef, key signature of two flats. Measures 103-118. Time signatures: 7/8 (measures 103-112), 7/8 (measures 113-118). Dynamics: *p* (measures 103-112) and *mp* (measures 113-118). A horizontal line spans from measure 103 to 118.

**J** ♩ = 123 accel.

**10**

Musical staff 119-128: Treble clef, key signature of three sharps. Measures 119-128. Time signature: 7/8 (measures 119-128). Dynamics: *p* (measures 119-122) and *mp* (measures 123-128). A horizontal line spans from measure 119 to 128.

133  $\text{♩} = 135$   $\text{♩} = 102$

*mf*

**K**  $\text{♩} = 102$  accel. **L** **M**

8 8

139-146 147-154 *p*

157

161

165

*mp* *f*

**N**  $\text{♩} = 114$  accel. **4**

171-174 *mp*

179 **O**

*mp*

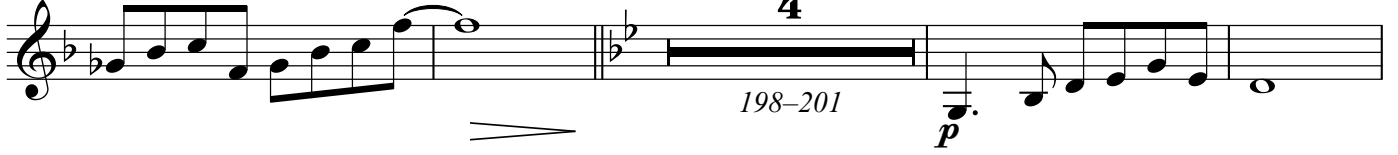
183

187 **P**

191



196



204



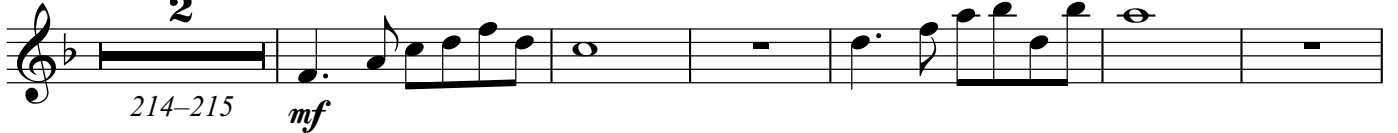
208



211



S = 131 accel.



222



226



230



234

*mf*

239

V ♩ = 142 accel.

*mp* *f* *ff*

246

*fff*

W ♩ = 145 accel.

10

250-259

*mp* *mf*

265

X ♩ = 151 accel.

*f* *mf* *f*

270

*ff* *fff*

Y ♩ = 119

3

♩ = 105

9

276-278

280-288

*ff* *fff*

289

Z ♩ = 99

*mf* *f* *ff*

296

♩ = 65

*mf* *f* *ff*



# Music At The Planck Scale

Alto Sax in Eb

The Perimeter Institute Orchestra

Barak Shoshany, 2018

**A**  $\text{♩} = 102$  **10** **4**  
Tempo follows LHC beam energy upgrades over time  
1-10 11-14

**B**  $\text{♩} = 111$  **5** **3**  
15-19 20-22

$\text{♩} = 120$  **8**  $\text{♩} = 115$  **4**  
23-30 31-34

**C**  $\text{♩} = 111$  **6**  
35-40 *p*

45  $\text{♩} = 93$   
*p* *mp*

49 **D**  $\text{♩} = 115$   
*p*

54 **E**  $\text{♩} = 115$  accel.  
*p*

60  $\text{♩} = 125$   
*f*

65 ♩ = 115

**F** ♩ = 127

**G** ♩ = 135 accel.

82

87

92

97

**I** ♩ = 102

**J** ♩ = 123 accel.

♩ = 135

♩ = 102

137

**K** ♩ = 102 accel.

**L** **M**

8

147-154

160

8

161-168

*mp* *f*

**N** ♩ = 114 accel. **O**

8

171-178

*mp*

182

186

**P**

190

193

**Q** ♩ = 125 accel.

6

198-203

204 R

*mp*

208

211

214 S ♩ = 131 accel.

*mf* 4

*mf* 216-219

222 T

*mf*

226

*mf*

230 U

*f*

234

*mf*

239 V ♩ = 142 accel.

*mp* f

243 *ff*

246 *fff*

**W** ♩ = 145 accel. **14**  
 *mf* *f*

266 **X** ♩ = 151 accel.  
 *mf* *f* *ff*

271 *fff* **3**

**Y** ♩ = 119 **3** ♩ = 105 **9**  
 *fff*

289 **Z** ♩ = 99  
 *mf* *f* *ff*

294 *mf*

298 ♩ = 65  
 *f* *ff*

# Music At The Planck Scale

The Perimeter Institute Orchestra

Barak Shoshany, 2018

**A** ♩ = 102 **10** Tempo follows LHC beam energy upgrades over time

1-10 *pp*

**B** ♩ = 111 **5** **3** ♩ = 120 **8**

15-19 20-22 23-30

31 ♩ = 115

35-44 *p* *mp*

**C** ♩ = 111 **10** ♩ = 93

49-53 *p* 54-56 *p*

**D** ♩ = 115 **5** **E** ♩ = 115 accel. **3** **3** **3** **3** **3**

60 *f* ♩ = 125 **3**

65 ♩ = 115

**F** ♩ = 127 **3** **3**

69-71 72-74

75 G ♩ = 135 accel.

82

88 H

93 ♩ = 140 ritard.

100 I ♩ = 102

6

103-108

112

119-124 J ♩ = 123 accel.

6

131 ♩ = 135 ♩ = 102

139-146 K ♩ = 102 accel. L 8 M 8

147-154

160 **4**  
161-164 *p* *mp* < *f* >

Musical staff 160-164. Treble clef, key signature of two flats. Measure 160 is a whole rest. Measure 161 has a whole note chord with a '4' above it. Measures 162-164 contain a melodic line starting with a half note, followed by quarter notes, and ending with a half note. Dynamics are *p* and *mp* < *f* >.

**N** ♩ = 114 accel. **O**  
8

171-178 *mp*

Musical staff 171-178. Bass clef, key signature of two flats. Measure 171 has a whole note chord with an '8' above it. Measures 172-178 contain a melodic line with various rhythmic values and rests. Dynamics are *mp*.

186 **P**

Musical staff 186. Bass clef, key signature of two flats. Measures 186-195 contain a melodic line with various rhythmic values and rests.

195 **Q** ♩ = 125 accel. **3**  
198-200 *p*

Musical staff 195-200. Bass clef, key signature of two flats. Measure 195 has a whole note chord with a '3' above it. Measures 196-197 have a melodic line. Measure 198 has a whole note chord with a '3' above it. Measures 199-200 have a melodic line. Dynamics are *p*.

204 **R** **4**  
206-209 *p*

Musical staff 204-209. Treble clef, key signature of two flats. Measure 204 has a whole note chord with an '8' below it. Measures 205-209 contain a melodic line with various rhythmic values and rests. Dynamics are *p*.

212 **S** ♩ = 131 accel. **4** **2**  
214-217 *mf* *mf* 220-221

Musical staff 212-221. Treble clef, key signature of two flats. Measures 212-213 have a melodic line with dynamics *mf*. Measure 214 has a whole note chord with a '4' above it. Measures 215-217 have a melodic line with dynamics *mf*. Measure 218 has a whole note chord with a '2' above it. Measures 219-221 have a melodic line.

222 **T**  
*mf* *mf*

Musical staff 222-231. Treble clef, key signature of two flats. Measures 222-231 contain a melodic line with various rhythmic values and rests. Dynamics are *mf*.

230 **U**  
*f*

Musical staff 230-236. Treble clef, key signature of two flats. Measures 230-236 contain a melodic line with various rhythmic values and rests. Dynamics are *f*.

234 *mf*

Musical staff 234-236. Treble clef, key signature of two flats. Measures 234-236 contain a melodic line with various rhythmic values and rests. Dynamics are *mf*.

237 *mp*

Musical staff 237-246. Treble clef, key signature of two flats. Measures 237-246 contain a melodic line with various rhythmic values and rests. Dynamics are *mp*.



241 **V** ♩ = 142 accel.

Musical staff for measures 241-244. The key signature has two flats (B-flat and E-flat). The music consists of eighth notes with accents, starting with a dynamic marking of *f*.

245

Musical staff for measures 245-248. The key signature changes to three flats (B-flat, E-flat, and A-flat) in measure 248. Dynamics range from *ff* to *fff*.

**W** ♩ = 145 accel.  
6

Musical staff for measures 249-255. The key signature has three sharps (F#, C#, G#). Measure 249 is a whole rest. Measures 250-255 are marked with a '6' and dynamics *p*, *mp*, and *mf*.

263

**X** ♩ = 151 accel.

Musical staff for measures 263-266. The key signature has three sharps. Dynamics include *f*, *mf*, and *f*.

270

Musical staff for measures 270-273. The key signature has three sharps. Dynamics include *ff* and *fff*.

**Y** ♩ = 119    ♩ = 105  
3

**Z** ♩ = 99  
9

Musical staff for measures 274-288. The key signature has two flats. Measures 274-278 are marked with a '3' and measure 276-278. Measures 280-288 are marked with a '9' and measure 280-288. Dynamics include *mf*, *f*, and *ff*.

294

♩ = 65

Musical staff for measures 294-297. The key signature has two flats. Dynamics include *mf*, *f*, and *ff*.

# Music At The Planck Scale

Trumpet in Bb

The Perimeter Institute Orchestra

Barak Shoshany, 2018

Tempo follows LHC beam energy upgrades over time

**A**  $\text{♩} = 102$  **10** **4**  
1-10 11-14

**B**  $\text{♩} = 111$  **5**  $\text{♩} = 120$  **3** **8**  
15-19 20-22 23-30

31  $\text{♩} = 115$

**C**  $\text{♩} = 111$  **10** **3**  $\text{♩} = 93$   
35-44 45-47

**D**  $\text{♩} = 115$  **5** **3** **E**  $\text{♩} = 115$  accel. **7**  $\text{♩} = 125$   
49-53 54-56 57-63

65  $\text{♩} = 115$

**F**  $\text{♩} = 127$  **3** **6** **G**  $\text{♩} = 135$  accel. **4**  
69-71 72-77 78-81

**3** **3**  
82-84 86-88

89 **H**

*mf* *f* *ff*

95  $\text{♩} = 140$  ritard.

*fff* *p*

**I**  $\text{♩} = 102$

10 6

103-112 113-118

**J**  $\text{♩} = 123$  accel.  $\text{♩} = 135$   $\text{♩} = 102$

12

119-130 131-135

*mp* *mf*

136 **K**  $\text{♩} = 102$  accel.

8

139-146

**L** 8 **M**

147-154

160 8

161-168

*mp* *f*

**N**  $\text{♩} = 114$  accel. **O**

8 2

171-178 185-186

**P** 3

187-189

**Q** ♩ = 125 accel. **4**  
198–201 *p*

**R** **8** **S** ♩ = 131 accel. **8** **T**  
206–213 214–221

227 **U** **2** **V** ♩ = 142 accel. **11**  
228–229 230–240

245

**W** ♩ = 145 accel. **12**  
250–261 *mf* *f*

266 **X** ♩ = 151 accel.  
*mf* *f* *ff*

272 **Y** ♩ = 119 ♩ = 105 **3** **9**  
*fff* 276–278 280–288

289 **Z** ♩ = 99  
*mf* *f* *ff*

296 ♩ = 65  
*mf* *f* *ff*

# Music At The Planck Scale

Piano

The Perimeter Institute Orchestra

Barak Shoshany, 2018

**A**  $\text{♩} = 102$   
Cm/Eb      Ab/C      Ebm      Bbm

*p*

Sustain every chord with pedal

5      Fm      Cm      Ab

9      Ebm      Bbm      Amaj7      Emaj7

13      C7(#5)      **B** Fm  $\text{♩} = 111$       Gb

*pp*      *p*

17      Fm      Gb      Db

Piano

20 Dmaj7 C7(#5) *pp*

23 Fm  $\text{♩} = 120$  Gb Fm Gb *mp*

27 Ebm Bbm Ebm Bbm

31 A maj7 E maj7 C7(#5)  $\text{♩} = 115$  *p* *pp*

35 C Cm  $\text{♩} = 111$  Ab *mp*

37 Ebm Bbm

39 Fm

41 Cm Ab

43 Ebm Bbm

45 Amaj7 Emaj7 C7(#5) pp

48  $\text{♩} = 93$  **D** Fm  $\text{♩} = 115$  Gb

51 Fm Gb Db

54 Dmaj7 C7(#5) pp

57 **E** Fm  $\text{♩} = 115$  accel. Gb Fm Gb

61 Ebm Bbm Ebm Bbm  $\text{♩} = 125$



65  $\text{♩} = 115$   
A<sup>m</sup>7 E<sup>m</sup>7 C7(♯5)

69 **F** D<sup>m</sup>7  $\text{♩} = 127$  F<sup>m</sup>7 A<sup>m</sup>7 C

*mf*

73 B<sup>b</sup>7 A<sup>m</sup>7 G<sup>m</sup>7 A<sup>b</sup>7 F<sup>m</sup>7

77 **G** D<sup>m</sup>7  $\text{♩} = 135$  accel. F<sup>m</sup>7 A<sup>m</sup>7 C

*ppp* *pp*

82 B<sup>b</sup>7 G<sup>m</sup>7 A<sup>b</sup>7 F<sup>m</sup>7

*p*

86 *mp*  $A\flat maj7$   $Fm7$   $A\flat maj7$

89 **H**  $G\sharp m$   $E maj7$   $G\sharp m$   $E maj7$  *mf* *f*

93  $G\sharp m$   $G\sharp m/F\sharp$   $F\emptyset7$   $E maj7$  *ff* *fff*  $\text{♩} = 140 \text{ ritard.}$

97

100  $D\sharp$  *mf*  $8va$   $6$

103 **I**  $\text{♩} = 102$   
Cm/Eb Ab/C Ebm Bbm

107 Fm Cm Ab

111 Ebm Bbm Amaj7 Emaj7

115 C#m

119 **J**  $\text{♩} = 123 \text{ accel.}$   
C#m 8va Emaj7/B Amaj7 G#m7 C#m

124 E<sup>maj7</sup>/B A<sup>maj7</sup> E B/D<sup>#</sup> C<sup>#m</sup> E<sup>maj7</sup>/B

129 A<sup>maj7</sup> G<sup>#m7</sup> C<sup>#m</sup> E<sup>maj7</sup>/B A<sup>maj7</sup> ♩ = 135

134 E B/D<sup>#</sup> C<sup>#m</sup> ♩ = 102

139 **K** C<sup>m</sup> ♩ = 102 accel.

143 C<sup>m</sup> A<sup>b</sup>maj7 F<sup>m7</sup> G<sup>b</sup>

147 **L** Cm Abmaj7 Fm7 Gb

*p*

151 Cm Abmaj7 Fm7 Gb

155 **M** Ebm Db Ab7/C Abm7/Cb

159 Ebm Db Ab7/C Cbmaj7

163 Gmaj7

167 Fmaj7 Gbmaj7(b5)

171 **N** Cm = 114 accel. Abmaj7 Fm7 Gb

175 Cm Abmaj7 Fm7 Gb

179 **O** Ebm Db Ab7/C Abm7/Cb

183 Ebm Db Ab7/C Abm7/Cb

187 **P** Abm Abm/Gb Fø7 Fbmaj7

191 Abm G+ Abm/Gb

194 Fø7 Fbmaj7(b5)

198 **Q** Fm = 125 accel. Cm/Eb Dbmaj7 Bbm

*p*

202 Fm Cm/Eb Dbmaj7 Bbm

206 **R** Gb Ebm7 Dbm/Fb Dbm

210 Gb Bbm Cbmaj7 C

214 **S** Cm = 131 accel. Abmaj7 Fm7 Gb

218 Cm Abmaj7 Fm7 Gb

222 **T** Ebm Db Ab7/C Abm7/Cb



226 Ebm Db Ab7/C Abm7/Cb

230 U Abm Abm/Gb Fø7 Fbmaj7

234 Abm G+ Abm/Gb

*mf*

237 Fø7 Fbmaj7(b5)

*mp*

241 V Abm ♩ = 142 accel. Abm/Gb Db7 Fbmaj7

*f*

245 *Abm* *Abm/Gb* *Fbmaj7* *Dbm*

*ff* *fff*

♩ = 145 accel.

249 *C#m* *Emaj7/B* *Amaj7* *G#m7*

W *8va*

*pp*

254 *C#m* *Emaj7/B* *Amaj7* *E* *B/D#* *C#m*

*p* *mp*

259 *Emaj7/B* *Amaj7* *G#m7* *C#m* *Emaj7/B*

*mf*

264 *Amaj7* *E* *B/D#* *X* *D* ♩ = 151 accel.

*f* *mf*

268 C#m (#) Bm7

*f* *ff*

272 Bbmaj7 Gm Eb

*fff*

276 Abmaj7

♩ = 119      ♩ = 105

*f* *mf*

281 Fm7 Ab Fm7 Gb

285 Ebm6 Dbmaj7 Cbmaj7

*8va*

289 **Z**  $\text{♩} = 99$   $\text{A}^\flat$   $\text{Fm}^7$   $\text{A}^\flat$   $\text{Fm}^7$

293  $\text{D}^\flat$   $\text{B}^\flat\text{m}$   $\text{G}^\flat$   $\text{E}^\flat\text{m}$

297  $\text{D}^\flat\text{maj}^7$   $\text{C}^\flat\text{maj}^7$

300  $\text{♩} = 65$   $\text{A}^\flat\text{m}(\text{maj}^7)$   $\text{E}^\flat\text{maj}^7$

# Music At The Planck Scale

Violin I

The Perimeter Institute Orchestra

Barak Shoshany, 2018

**A**  $\text{♩} = 102$  **10** **4**  
Tempo follows LHC beam energy upgrades over time  
1-10 11-14

**B**  $\text{♩} = 111$  **5**  $\text{♩} = 120$  **3** **8**  
15-19 20-22 23-30

$\text{♩} = 115$  **C**  $\text{♩} = 111$  **4** **6**  
31-34 35-40 *p*

44  $\text{♩} = 93$   
*p* *mp*

49 **D**  $\text{♩} = 115$   
*p* 3 3 3 3 3

54 **E**  $\text{♩} = 115$  accel.  
*p* 3 3 3 3

60  $\text{♩} = 125$   
*f* 3 3 3 3

65  $\text{♩} = 115$

69 **F**  $\text{♩} = 127$   
*p*

78 **G** ♩ = 135 accel.

Musical staff 78-83: Treble clef, 3/4 time signature. Measures 78-83. Dynamics: *ppp* (measures 78-82), *pp* (measures 83-84). Includes triplets in measures 83 and 84.

Musical staff 84-88: Treble clef, 3/4 time signature. Measures 84-88. Dynamics: *p* (measures 84-86), *mp* (measures 87-88). Includes triplets in measures 84, 86, and 88.

Musical staff 89-94: Treble clef, 3/4 time signature. Measures 89-94. Dynamics: *mf* (measures 89-91), *f* (measures 92-93), *ff* (measures 94-95). Includes triplets in measures 90, 92, and 94.

Musical staff 95-99: Treble clef, 3/4 time signature. Measures 95-99. Dynamics: *fff* (measures 95-99). Includes triplets in measures 95 and 96. Tempo marking: ♩ = 140 ritard.

Musical staff 100-102: Treble clef, 3/4 time signature. Measures 100-102. Dynamics: *p* (measures 100-102). Includes a fermata over measures 100-101. Tempo marking: ♩ = 102. Section marker **I** at measure 102. Measure numbers 103-112 are indicated below the staff.

Musical staff 113-122: Treble clef, 3/4 time signature. Measures 113-122. Dynamics: *pp* (measures 113-122). Includes a fermata over measures 113-118. Section marker **J** at measure 119. Tempo marking: ♩ = 123 accel. Measure numbers 113-118 and 119-122 are indicated below the staff.

Musical staff 127-132: Treble clef, 3/4 time signature. Measures 127-132. Dynamics: *p* (measures 127-130), *mp* (measures 131-132).

Musical staff 133-138: Treble clef, 3/4 time signature. Measures 133-138. Dynamics: *mf* (measures 133-138). Includes a fermata over measures 133-138. Tempo markings: ♩ = 135 (measures 133-134), ♩ = 102 (measures 135-138).

Musical staff 139-146: Treble clef, 3/4 time signature. Measures 139-146. Dynamics: *p* (measures 139-146). Includes a fermata over measures 139-146. Section marker **K** at measure 139. Tempo marking: ♩ = 102 accel. Measure numbers 139-146 are indicated below the staff.

155 **M**

*p*

163

*mp* *f*

171 **N** ♩ = 114 accel.

*mp*

175

179 **O**

*mp*

183

187 **P**

*mp*

191

195

*mp*

**Q** ♩ = 125 accel.

8

*mp*

206 **R** *mp*

Musical notation for measures 206-209. The key signature has three flats. The music consists of eighth-note patterns with rests. A box labeled 'R' is above the first measure. The dynamic is *mp*.

210

Musical notation for measures 210-213. The music continues with eighth-note patterns. The key signature changes to two flats at the end of the line.

214 **S** ♩ = 131 accel. *mf*

Musical notation for measures 214-217. The music consists of eighth-note patterns. A box labeled 'S' is above the first measure, with a quarter note and the text '♩ = 131 accel.'. The dynamic is *mf*.

218

Musical notation for measures 218-221. The music continues with eighth-note patterns. A natural sign is above the first measure.

222 **T** *p* *mp* *mf* *8va*

Musical notation for measures 222-229. The music consists of whole notes. A box labeled 'T' is above the first measure. The dynamic starts at *p*, moves to *mp*, and then *mf*. A dashed line labeled '8va' is above the staff.

230 **U** *f* *mf*

Musical notation for measures 230-238. The music consists of whole notes. A box labeled 'U' is above the first measure. The dynamic starts at *f* and moves to *mf*.

239 **V** ♩ = 142 accel. *mp* *f* *ff* *8va*

Musical notation for measures 239-245. The music consists of whole notes. A box labeled 'V' is above the first measure, with a quarter note and the text '♩ = 142 accel.'. The dynamic starts at *mp*, moves to *f*, and then *ff*. A dashed line labeled '8va' is above the staff.

246 *fff*

Musical notation for measures 246-250. The music consists of eighth-note patterns. The dynamic is *fff*.

250-253 **W** ♩ = 145 accel. *p* *mp*

Musical notation for measures 250-253. The music consists of eighth-note patterns. A box labeled 'W' is above the first measure, with a quarter note and the text '♩ = 145 accel.'. The dynamic starts at *p* and moves to *mp*. The key signature changes to three sharps and the time signature to 7/8.



259

Musical staff for measures 259-265. The key signature is three sharps (F#, C#, G#) and the time signature is 4/4. The music features a melodic line with dynamic markings *mf* and *f*. A hairpin crescendo is shown below the staff.

266

X ♩ = 151 accel.

Musical staff for measures 266-270. The key signature is three sharps and the time signature is 4/4. The music features a melodic line with dynamic markings *mf*, *f*, and *ff*. A hairpin crescendo is shown below the staff.

271

Musical staff for measures 271-275. The key signature is three sharps. The music features a melodic line with dynamic marking *fff* and a triplet of eighth notes. A hairpin crescendo is shown below the staff.

276

Y ♩ = 119

♩ = 105

Musical staff for measures 276-282. The key signature is two flats (Bb, Eb) and the time signature changes from 4/4 to 2/4 and back to 4/4. The music features a melodic line with dynamic markings *f* and *mf*.

283

Musical staff for measures 283-288. The key signature is two flats and the time signature is 4/4. The music features a melodic line with a triplet of eighth notes.

289

Z <sup>8va</sup> ♩ = 99

Musical staff for measures 289-293. The key signature is two flats and the time signature is 3/4. The music features a melodic line with dynamic markings *mf*, *f*, and *ff*. A dashed line indicates an octave transposition (<sup>8va</sup>) for the first part of the staff.

294

Musical staff for measures 294-297. The key signature is two flats and the time signature changes from 3/4 to 4/4. The music features a melodic line with dynamic marking *mf*.

298

♩ = 65

Musical staff for measures 298-303. The key signature is two flats and the time signature is 4/4. The music features a melodic line with dynamic markings *f* and *ff*. A dashed line indicates an octave transposition (<sup>8va</sup>) for the first part of the staff.

# Music At The Planck Scale

The Perimeter Institute Orchestra

Barak Shoshany, 2018

**A**  $\text{♩} = 102$  **10** **4**  
Tempo follows LHC beam energy upgrades over time  
1-10 11-14

**B**  $\text{♩} = 111$  **5** **3**  $\text{♩} = 120$  **8**  
15-19 20-22 23-30

$\text{♩} = 115$  **4** **C**  $\text{♩} = 111$  **6**  
31-34 35-40 *p*

44  $\text{♩} = 93$   
*p* *mp*

49 **D**  $\text{♩} = 115$   
*p* 3 3 3 3 3

54 **E**  $\text{♩} = 115$  accel.  
*p* 3 3 3 3

60  $\text{♩} = 125$   
*f* 3 3 3 3

65  $\text{♩} = 115$

69 **F**  $\text{♩} = 127$   
*p*

78 **G** ♩ = 135 accel.

Musical staff 78-83: Treble clef, 3/4 time signature. Measures 78-83. Dynamics: *ppp* (measures 78-81), *pp* (measures 82-83). Includes triplet markings.

84

Musical staff 84-88: Treble clef, 3/4 time signature. Measures 84-88. Dynamics: *p* (measures 84-85), *mp* (measures 86-88). Includes triplet markings.

89 **H**

Musical staff 89-94: Treble clef, 3/4 time signature. Measures 89-94. Dynamics: *mf* (measures 89-90), *f* (measures 91-92), *ff* (measures 93-94). Includes triplet markings.

95

♩ = 140 ritard.

Musical staff 95-99: Treble clef, 3/4 time signature. Measures 95-99. Dynamics: *fff*. Includes triplet markings.

100

**I** ♩ = 102

Musical staff 100-102: Treble clef, 3/4 time signature. Measures 100-102. Dynamics: *p*. Includes a fermata over measures 100-101. Measure 102 is a whole note. Section number 10.

103-112

**J** ♩ = 123 accel.

Musical staff 103-133: Treble clef, 3/4 time signature. Measures 103-133. Dynamics: *mp*. Includes fermatas over measures 103-108 (6), 109-114 (12), and 115-120. Section number 10.

113-118

119-130

134

♩ = 102

Musical staff 134-138: Treble clef, 4/4 time signature. Measures 134-138. Dynamics: *mf*. Includes a long slur over measures 134-138.

**K** ♩ = 102 accel.

**L**

Musical staff 139-154: Treble clef, 4/4 time signature. Measures 139-154. Dynamics: *p*. Includes a fermata over measures 139-146. Section number 8.

139-146

155

**M**

Musical staff 155-160: Treble clef, 4/4 time signature. Measures 155-160. Dynamics: *p*. Includes a long slur over measures 155-160.

163

Musical staff 163-170. The staff contains a melodic line with a slur over measures 163-166. Dynamic markings include *mp* and *f*.

171 **N** ♩ = 114 accel.

Musical staff 171-174. The staff contains a rhythmic pattern of eighth notes. Dynamic marking is *mp*.

175

Musical staff 175-178. The staff contains a rhythmic pattern of eighth notes.

179 **O**

Musical staff 179-182. The staff contains a rhythmic pattern with changing time signatures: 3/4, 4/4, 3/4, 4/4. Dynamic marking is *mp*.

183

Musical staff 183-186. The staff contains a rhythmic pattern with changing time signatures: 4/4, 3/4, 4/4, 4/4.

187 **P**

Musical staff 187-190. The staff contains a rhythmic pattern with changing time signatures: 4/4, 3/4, 4/4.

191

Musical staff 191-193. The staff contains a rhythmic pattern of eighth notes.

194

Musical staff 194-197. The staff contains a melodic line with a slur over measures 194-197. Dynamic marking is *f*.

**Q** ♩ = 125 accel.

Musical staff 198-205. The staff contains a long horizontal line representing a sustained note or tremolo. The number '8' is written above the staff. The staff ends with a double bar line and a key signature change to three flats.

198-205

206 **R**

*mp*

210

214 **S** ♩ = 131 accel.

*mf*

218

222 **T**

*p* *mp* *mf*

230 **U**

*f* *mf*

239 **V** ♩ = 142 accel.

*mp* *f*

244

*ff* *fff*

249 **W** ♩ = 145 accel.

**12**

*mf* *f*

250-261

266 **X** ♩ = 151 accel.

271

276 **Y** ♩ = 119      ♩ = 105

283

289 **Z** ♩ = 99

294

298 ♩ = 65

Viola

# Music At The Planck Scale

The Perimeter Institute Orchestra

Barak Shoshany, 2018

**A** ♩ = 102 **10** **4**  
Tempo follows LHC beam energy upgrades over time  
1-10 11-14

**B** ♩ = 111 **5** **3** ♩ = 120 **8**  
15-19 20-22 23-30

♩ = 115 **4** **C** ♩ = 111 **10**  
31-34 35-44

♩ = 93 **3** **D** ♩ = 115  
45-47

52

57 **E** ♩ = 115 accel.  
*p* *f*

63 ♩ = 125 ♩ = 115

69 **F** ♩ = 127  
*p*

78 **G** ♩ = 135 accel.  
*ppp* *pp* v5

84

Musical staff 84-88. Key signature: one flat. Time signatures: 3/8, 3/4, 4/4, 3/4, 4/4. Dynamics: *p*, *mp*. Features triplets and slurs.

89

**H**

Musical staff 89-94. Key signature: two sharps. Time signatures: 3/8, 3/4, 4/4, 4/4. Dynamics: *mf*, *f*, *ff*. Features triplets and slurs.

95

$\text{♩} = 140$  ritard.

Musical staff 95-99. Key signature: two sharps. Time signature: 3/8. Dynamics: *fff*. Features triplets and slurs.

100

**I**  $\text{♩} = 102$

**10**

Musical staff 100-102. Key signature: two sharps. Time signature: 3/8. Dynamics: *p*. Features slurs and rests.

103-112

**J**  $\text{♩} = 123$  accel.

**6**

**8**

Musical staff 103-126. Key signature: two sharps. Time signatures: 3/8, 7/8, 8/8. Dynamics: *p*. Features rests and slurs.

113-118

119-126

131

$\text{♩} = 135$

$\text{♩} = 102$

Musical staff 131-135. Key signature: two sharps. Time signatures: 3/8, 4/4. Dynamics: *mp*, *mf*. Features slurs.

**K**  $\text{♩} = 102$  accel.

**8**

**L**

Musical staff 136-146. Key signature: two flats. Time signature: 3/8. Dynamics: *p*. Features rests and slurs.

139-146

155

**M**

Musical staff 155-162. Key signature: two flats. Time signatures: 3/4, 4/4, 3/4, 4/4, 3/4, 4/4. Dynamics: *p*. Features slurs.

163

Musical staff 163-166. Key signature: two flats. Time signature: 3/8. Dynamics: *mp*, *f*. Features slurs.



171 **N** ♩ = 114 accel.

Musical notation for measures 171-174. The piece is in 3/8 time with a key signature of two flats (B-flat and E-flat). The music consists of a continuous eighth-note pattern. The dynamic marking is *mp*.

175

Musical notation for measures 175-178. The piece is in 3/8 time with a key signature of two flats. The music consists of a continuous eighth-note pattern.

179 **O**

Musical notation for measures 179-182. The piece is in 3/8 time with a key signature of two flats. The music consists of a continuous eighth-note pattern. The dynamic marking is *mp*. Measure 180 features a change to 3/4 time.

183

Musical notation for measures 183-186. The piece is in 3/8 time with a key signature of two flats. The music consists of a continuous eighth-note pattern. Measure 184 features a change to 4/4 time.

187 **P**

Musical notation for measures 187-190. The piece is in 3/8 time with a key signature of two flats. The music consists of a continuous eighth-note pattern. Measure 189 features a change to 3/4 time.

191

Musical notation for measures 191-194. The piece is in 3/8 time with a key signature of two flats. The music consists of a continuous eighth-note pattern. Measure 192 features a change to 4/4 time.

195

Musical notation for measures 195-197. The piece is in 3/8 time with a key signature of two flats. The music consists of a continuous eighth-note pattern. Measure 197 features a change to 3/8 time.

**Q** ♩ = 125 accel.

8

Musical notation for measures 198-205. The piece is in 3/8 time with a key signature of two flats. The music consists of a continuous eighth-note pattern.

198-205

206 **R**

*mp*

210

214 **S** ♩ = 131 accel.

*mf*

218

222 **T**

*p* *mp* *mf*

230 **U**

*f* *mf*

239 **V** ♩ = 142 accel.

*mp* *f*

244

*ff* *fff*

249 **W** ♩ = 145 accel.

8  
250-257  
*mp*

260

Musical notation for measures 260-265. The key signature is three sharps (F#, C#, G#). The time signature is 4/4. The music consists of a single melodic line with a dynamic range from *mf* to *f*.

266 **X** ♩ = 151 accel.

Musical notation for measures 266-270. The key signature is three sharps. The time signature changes to 4/4. The music features a dynamic range from *mf* to *ff* and includes an acceleration instruction.

271

Musical notation for measures 271-275. The key signature is three sharps. The time signature is 4/4. The music includes a triplet of eighth notes and a dynamic range from *mf* to *fff*.

276 **Y** ♩ = 119 ♩ = 105

Musical notation for measures 276-284. The key signature is two flats (Bb, Eb). The time signature changes from 4/4 to 2/4 and back to 4/4. The music features a dynamic range from *f* to *mf*.

285

Musical notation for measures 285-293. The key signature is two flats. The time signature is 4/4. The music includes an 8va instruction and a dynamic range from *mf* to *ff*. A tempo marking of ♩ = 65 is present.

294 (8)

Musical notation for measures 294-302. The key signature is two flats. The time signature changes from 4/4 to 3/4 and back to 4/4. The music features a dynamic range from *mf* to *ff*.

Violoncello

# Music At The Planck Scale

The Perimeter Institute Orchestra

Barak Shoshany, 2018

Tempo follows LHC beam energy upgrades over time

**A** ♩ = 102 **10** **4**

1-10 11-14

**B** ♩ = 111 **5** **3** ♩ = 120 **8**

15-19 20-22 23-30

♩ = 115 **4** **C** ♩ = 111 **10**

31-34 35-44

**D** ♩ = 115 **3** ♩ = 93 **3** **3** **3** **3**

45-47

52 **3** **3** **3**

57 **E** ♩ = 115 accel. **3** **3** **3** **3** **3** **3**

*p* *f*

63 ♩ = 125 ♩ = 115 **3** **3**

69 **F** ♩ = 127 **7** **4** **3**

*p*

78 **G** ♩ = 135 accel. **3** **3**

*ppp* *pp*

84

Musical notation for measures 84-88. It features a bass clef and a key signature of three sharps (F#, C#, G#). The music consists of eighth notes with triplet markings. The dynamics are *p* (piano) for measures 84-85 and *mp* (mezzo-piano) for measures 86-88. The time signature changes from 3/4 to 4/4.

89

**H**

Musical notation for measures 89-94. It features a bass clef and a key signature of three sharps. The music consists of eighth notes with triplet markings. The dynamics are *mf* (mezzo-forte) for measures 89-90, *f* (forte) for measures 91-92, and *ff* (fortissimo) for measures 93-94. The time signature changes from 3/4 to 4/4.

95

$\text{♩} = 140$  ritard.

Musical notation for measures 95-101. It features a bass clef and a key signature of three sharps. The music consists of eighth notes with triplet markings. The dynamics are *fff* (fortississimo) for measures 95-96 and *p* (piano) for measures 97-101. The time signature changes from 4/4 to 3/4.

102

**I**  $\text{♩} = 102$

6

Musical notation for measures 102-108. It features a bass clef and a key signature of three sharps. A measure rest for 6 measures is indicated above the staff for measures 103-108. The dynamics are *pp* (pianissimo) for measures 102 and 109-110. The time signature changes from 3/4 to 4/4.

112

Musical notation for measures 112-118. It features a bass clef and a key signature of three sharps. The music consists of eighth notes. The time signature changes from 4/4 to 7/8.

**J**  $\text{♩} = 123$  accel.

7

Musical notation for measures 119-125. It features a bass clef and a key signature of three sharps. A measure rest for 7 measures is indicated above the staff for measures 119-125. The dynamics are *pp* (pianissimo) for measures 119-120, *p* (piano) for measures 121-122, and *mp* (mezzo-piano) for measures 123-125. The time signature changes from 7/8 to 4/4.

132

$\text{♩} = 135$        $\text{♩} = 102$

Musical notation for measures 132-138. It features a bass clef and a key signature of three sharps. The music consists of eighth notes. The dynamics are *mf* (mezzo-forte) for measures 132-133 and *p* (piano) for measures 134-138. The time signature changes from 4/4 to 3/4.

**K**  $\text{♩} = 102$  accel.

**L**

8

Musical notation for measures 139-146. It features a bass clef and a key signature of three sharps. A measure rest for 8 measures is indicated above the staff for measures 139-146. The dynamics are *p* (piano) for measures 147-151. The time signature changes from 3/4 to 4/4.

155

**M**

Musical notation for measures 155-161. It features a bass clef and a key signature of three sharps. The music consists of eighth notes. The dynamics are *p* (piano) for measures 155-161. The time signature changes from 4/4 to 3/4 and back to 4/4.

163

Musical notation for measures 163-170. The piece is in a key with two flats (B-flat and E-flat) and a common time signature. The notation features a series of eighth and sixteenth notes, with some notes beamed together. A dynamic marking of *mp* is present, followed by a crescendo leading to *f*.

171 **N** ♩ = 114 accel.

Musical notation for measures 171-178. The notation consists of a series of half notes. A dynamic marking of *mp* is present.

179 **O**

Musical notation for measures 179-186. The notation features a sequence of time signature changes: 3/4, 4/4, 3/4, 4/4, 3/4, 4/4. A dynamic marking of *mp* is present.

187 **P**

Musical notation for measures 187-194. The notation features a sequence of time signature changes: 3/4, 4/4, 3/4, 4/4. A dynamic marking of *p* is present.

197 **Q** ♩ = 125 accel.  
4

Musical notation for measures 197-205. The notation includes a measure rest for measures 198-201, indicated by a thick black bar. A dynamic marking of *p* is present.

206 **R**

Musical notation for measures 206-213. The notation features a series of eighth and sixteenth notes. A dynamic marking of *mp* is present.

214 **S** ♩ = 131 accel.

Musical notation for measures 214-221. The notation consists of a series of half notes. A dynamic marking of *mf* is present.

222 **T**

Musical notation for measures 222-229. The notation features a sequence of time signature changes: 3/4, 4/4, 3/4, 4/4, 3/4, 4/4. A dynamic marking of *mf* is present.

230 **U**

Musical notation for measures 230-237. The notation features a series of eighth and sixteenth notes. A dynamic marking of *f* is present, followed by a decrescendo leading to *mf*. A double bar line is present at the end of the line.

239 V ♩ = 142 accel.

246

W ♩ = 145 accel.

250-256

264 X ♩ = 151 accel.

272 Y ♩ = 119      ♩ = 105

280

289 Z ♩ = 99

296 ♩ = 65