

## **ammann**

from *a history of the domino problem*  
for 5 to 8 sustaining instruments

The ensemble can play any 5 or more parts (preferably as many as possible) and any 8 or more adjacent sections. If the ensemble starts after the first section (the 2nd through 13th sections), the performers should start on the first note that has an onset within the first measure of the section (replacing the tied note from the last measure of the previous section with a rest). If ending before the final section (the 8th through 19th sections), the last note of each part should be the note tied over from the penultimate measure of the section. Each part should be as distinct in timbre as possible.

All the parts are notated within one octave. Written above each note is an up or down arrow indicating whether the pitch be played high or low. That is, in each part, each pitch-class can occur in one of two ways: in either a higher register or a lower one (the up / down arrows should be interpreted in the same respective register throughout). Which registers are selected for each note in each part is open, but should be selected such that there is some overlap / pitch duplications among the parts and some separation. Limiting the overlap will naturally stratify the registers of the parts. The part number should generally correspond to its relative register (i.e. part 2 should be generally higher than part 1). The ensemble can explore replacing pitches of one to two of the parts with various non-pitched percussion instruments with relatively long decays. The up and down arrows would then be interpreted as two different types of the same instrument (e.g. two sizes of triangles).

The pitches of the piece are derived from a rational tuning systems based on the harmonic series. The notes in the score may be interpreted to the nearest quarter-tone (as written), or preferably with the following cent deviations given from the nearest pitch in 24-tone equal temperament.



\*This piece is part of a large-scale performance-installation titled *a history of the domino problem*. It may be played alone or alongside other pieces from *a history of the domino problem*. Instructions are given in the score detailing the superordinate, large-scale work.

# ammann

from a history of the domino the problem

michael winter

(schloss solitude, stuttgart and calle monclova 62, mexico city; 2018-19)

2/4 3/8 5/8 3/4 2/4

8  $\text{♩} \approx 60$

7

6

5

4

3

2

1

1

10 3/8 5/8 3/4 2/4 3/8 5/8 4/4

8

7

6

5

4

3

2

1

(ammann)

19  $\frac{4}{4}$   $\frac{5}{8}$   $\frac{3}{8}$   $\frac{7}{4}$   $\frac{2}{4}$   $\frac{1}{4}$   $\frac{2}{4}$   $\frac{1}{4}$   $\frac{5}{8}$   $\frac{7}{8}$

8 *p* *mf* *p* *mf*

7 *p* *mf* *p* *mf*

6 *mf* *p* *mf* *p*

5 *p* *mf* *p* *mf*

4 *p* *mf* *p* *mf*

3 *p* *mf* *p* *mf*

2 *p* *mf*

1 *mf* *p* *mf* *p*

29  $\frac{7}{8}$   $\frac{1}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{5}{8}$   $\frac{3}{8}$   $\frac{2}{4}$

8 *p* *mf* *p* *mf*

7 *p* *mf* *p* *mf*

6 *mf* *p* *mf* *p*

5 *p* *mf* *p* *mf*

4 *mf* *p* *mf* *p*

3 *mf* *p* *mf* *p*

2 *mf* *p* *mf* *p*

1 *mf* *p* *mf* *p*

2

(ammann)

38  $\frac{2}{4}$   $\frac{3}{8}$   $\frac{2}{4}$   $\frac{4}{4}$   $\frac{3}{4}$   $\frac{3}{8}$   $\frac{2}{4}$   $\frac{5}{8}$

47  $\frac{7}{8}$   $\frac{2}{4}$   $\frac{4}{4}$   $\frac{3}{4}$   $\frac{3}{8}$   $\frac{2}{4}$

(ammann)

54  $\frac{2}{4}$   $\frac{4}{4}$   $\frac{1}{4}$   $\frac{3}{8}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{9}{8}$   $\frac{1}{4}$   $\frac{3}{8}$

8  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

7  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

6  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

5  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

4  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

3  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

2  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

1  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

62  $\frac{3}{8}$   $\frac{2}{4}$   $\frac{5}{8}$   $\frac{3}{8}$   $\frac{2}{4}$   $\frac{1}{4}$   $\frac{2}{4}$   $\frac{13}{8}$   $\frac{3}{8}$

8  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

7  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

6  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

5  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

4  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

3  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

2  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

1  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

(ammann)

70  $\frac{3}{8}$   $\frac{5}{8}$   $\frac{1}{4}$   $\frac{3}{8}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{1}{4}$   $\frac{3}{8}$

8 *p* *mf* *p* *mf* *p* *mf* *p* *mf*

7 *p* *mf* *p* *mf* *p* *mf* *p* *mf*

6 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

5 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

4 *p* *mf* *p* *mf* *p* *mf* *p* *mf*

3 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

2 *p* *mf* *p* *mf* *p* *mf* *p* *mf*

1 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

80  $\frac{3}{8}$   $\frac{5}{8}$   $\frac{3}{8}$   $\frac{3}{4}$   $\frac{4}{4}$   $\frac{7}{8}$

8 *p* *mf* *p* *mf* *p* *mf* *p* *mf*

7 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

6 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

5 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

4 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

3 *p* *mf* *p* *mf* *p* *mf* *p* *mf*

2 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

1 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

(ammann)

88  $\frac{7}{8}$   $\frac{3}{8}$   $\frac{2}{4}$   $\frac{5}{8}$   $\frac{2}{4}$   $\frac{5}{8}$   $\frac{3}{8}$   $\frac{1}{4}$

97  $\frac{1}{4}$   $\frac{2}{4}$   $\frac{1}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{8}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{1}{4}$

(ammann)

107

4/4 2/4 11/4 3/8 1/4 3/8 5/8 2/4 3/8

8

7

6

5

4

3

2

1

116

7/8 1/4 3/8 5/8 3/8 1/4 5/8 2/4 1/4

8

7

6

5

4

3

2

1



(ammann)

126  $\frac{1}{4}$   $\frac{2}{4}$   $\frac{8}{4}$   $\frac{2}{4}$   $\frac{3}{8}$

8  $p$   $mf$   $p$   $mf$   $p$

7  $p$   $mf$   $p$   $mf$   $p$

6  $p$   $mf$   $p$   $mf$   $p$

5  $p$   $mf$   $p$   $mf$   $p$

4  $p$   $mf$   $p$   $mf$   $p$

3  $p$   $mf$   $p$   $mf$   $p$

2  $p$   $mf$   $p$   $mf$   $p$

1  $p$   $mf$   $p$   $mf$   $p$

5

134  $\frac{3}{8}$   $\frac{7}{8}$   $\frac{2}{4}$   $\frac{1}{4}$   $\frac{5}{8}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{5}{8}$   $\frac{3}{8}$

8  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$

7  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$

6  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$

5  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$

4  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$

3  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$

2  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$

1  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$

(ammann)

143  $\frac{3}{8}$   $\frac{1}{4}$   $\frac{3}{4}$   $\frac{3}{8}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{5}{8}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{1}{4}$

8  $p$   $mf$   $p$

7  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

6  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

5  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$

4  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

3  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

2  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

1  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

153  $\frac{1}{4}$   $\frac{5}{8}$   $\frac{4}{4}$   $\frac{5}{8}$   $\frac{2}{4}$   $\frac{3}{8}$   $\frac{2}{4}$

8  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

7  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

6  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

5  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$

4  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

3  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

2  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$

1  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

6

(162)

3/8 3/4 1/4 5/8 3/4

8 7 6 5 4 3 2 1

(171)

3/4 7/8 2/4 7/8 3/8 2/4 3/8

8 7 6 5 4 3 2 1

179  $\frac{3}{8}$   $\frac{3}{4}$   $\frac{7}{8}$   $\frac{1}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{8}$   $\frac{2}{4}$   $\frac{3}{8}$

8  $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$

188  $\frac{3}{8}$   $\frac{5}{8}$   $\frac{3}{8}$   $\frac{3}{4}$   $\frac{5}{8}$   $\frac{3}{8}$   $\frac{5}{8}$   $\frac{2}{4}$   $\frac{3}{8}$   $\frac{3}{4}$

8  $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$   $mf$   $p$

7

(ammann)

197

3/4 3/8 2/4 5/8 3/8 5/8 4/4

8

7

6

5

4

3

2

1

206

4/4 1/4 3/8 3/4 7/8 7/4 2/4

8

7

6

5

4

3

2

1

(ammann)

213

2/4 3/8 1/4 2/4 3/8 1/4 3/8 1/4 3/8

8 7 6 5 4 3 2 1

224

3/8 2/4 5/8 3/4 4/4 1/4 3/8 1/4 7/8

8 7 6 5 4 3 2 1

(233)

7/8 5/8 1/4 2/4 3/8 7/4 1/4 3/8 9/4

(241)

9/4 3/4 3/8 2/4 3/8 1/4 3/4

(ammann)

(250)

3/4 1/4 3/8 4/4 5/8 2/4 1/4 5/8 3/4 2/4

8

7

6

5

4

3

2

1

9

(259)

2/4 3/8 1/4 2/4 3/8 5/8 2/4 3/8 5/8

8

7

6

5

4

3

2

1



(ammann)

269

5/8 3/4 5/8 1/4 3/4 3/8 5/8 3/8

8

7

6

5

4

3

2

1

278

3/4 2/4 5/8 2/4 3/8 5/8 9/8

8

7

6

5

4

3

2

1

287

9/8 3/8 4/4 1/4 3/8 5/8 3/4 5/8

8

7

6

5

4

3

2

1

10

295

5/8 3/8 3/4 5/8 2/4 5/8 2/4 5/8 1/4 2/4

8

7

6

5

4

3

2

1

11

(ammann)

304

2/4 5/8 1/4 3/8 4/4 3/8 5/8

8

7

6

5

4

3

2

1

313

5/8 2/4 5/8 3/8 5/8 7/8 2/4

8

7

6

5

4

3

2

1

(ammann)

321

2/4 3/4 2/4 1/4 3/8 5/8 7/8 5/8 3/8

11

329

3/8 2/4 4/4 3/8 1/4 7/8 2/4 3/8

19

(ammann)

338

3/8 1/4 4/4 1/4 5/8 1/4 3/8 2/4 3/8 1/4 5/8

8

7

6

5

4

3

2

1

348

5/8 9/8 3/8 3/4 1/4 3/8 5/8 1/4 2/4

8

7

6

5

4

3

2

1

12

(357)

5/8 9/8 7/8 1/4 2/4 5/8 2/4 3/8 2/4

8 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

7 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

6 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

5 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

4 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

3 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

2 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

1 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

(366)

2/4 5/8 3/8 3/4 5/8 1/4 13/8 1/4 4/4

8 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

7 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

6 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

5 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

4 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

3 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

2 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

1 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

376

4/4 3/8 5/8 1/4 2/4 5/8 2/4 3/8 3/4 3/8 2/4

8 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

7 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

6 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

5 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

4 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

3 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

2 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

1 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* 13

386

2/4 3/4 5/8 3/8 5/8

8 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

7 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

6 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

5 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

4 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

3 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

2 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

1 *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p* *mf*

395

1/4 2/4 5/8 1/4 3/8 4/4 1/4 3/8

8 *mf* *p* *mf* *p*

7 *mf* *p* *mf* *p* *mf*

6 *mf* *p* *mf* *p* *mf* *p*

5 *mf* *p* *mf* *p* *mf*

4 *mf* *p* *mf*

3 *p* *mf* *p* *mf* *p*

2 *mf* *p* *mf* *p* *mf*

1 *p* *mf* *p* *mf*

406

3/8 4/4 1/4 5/8 2/4 1/4 2/4 1/4 5/8 3/4

8 *mf* *p* *mf* *p* *mf* *p*

7 *p* *mf* *p* *mf* *p* *mf* *p* *mf*

6 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

5 *p* *mf*

4 *p* *mf* *p* *mf* *p* *mf*

3 *mf* *p* *mf* *p* *mf* *p* *mf*

2 *p* *mf* *p*

1 *p* *mf* *p* *mf* *p*



416

3/4 3/8 2/4 3/8 5/8 2/4 1/4 5/8 1/4

14

425

1/4 2/4 3/8 1/4 5/8 7/8 5/8 3/8

(ammann)

436

3/8 5/8 10/4 3/8 5/8 7/8 2/4

8

7

6

5

4

3

2

1

443

2/4 4/4 5/8 2/4 5/8 3/8 2/4

8

7

6

5

4

3

2

1

15

452

2/4 5/8 3/8 4/4 8/4 1/4 3/8

8

7

6

5

4

3

2

1

459

3/8 1/4 3/8 2/4 5/8 2/4 5/8

8

7

6

5

4

3

2

1

469

(478)

16

(ammann)

488

3/8 3/4 2/4 4/4 2/4 7/8 1/4 3/4 5/8

8

7

6

5

4

3

2

1

497

5/8 2/4 5/8 1/4 11/8 5/8 2/4 3/8

8

7

6

5

4

3

2

1

(ammann)

505

3/8 3/4 7/8 5/8 3/8 2/4 1/4 2/4 7/8 5/8

8 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

7 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

6 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

5 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

4 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

3 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

2 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

1 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

17

514

5/8 3/8 1/4 5/8 1/4 2/4 3/8 7/8

8 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

7 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

6 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

5 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

4 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

3 *p* *mf* *p* *mf* *p* *mf* *p* *mf* *p*

2 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

1 *mf* *p* *mf* *p* *mf* *p* *mf* *p*

524

534

-30-

(ammann)

(542)  $\frac{1}{4}$   $\frac{2}{4}$   $\frac{5}{8}$   $\frac{2}{4}$   $\frac{1}{4}$   $\frac{2}{4}$   $\frac{3}{8}$   $\frac{3}{4}$   $\frac{3}{8}$

18

(553)  $\frac{3}{8}$   $\frac{5}{8}$   $\frac{3}{8}$   $\frac{1}{4}$   $\frac{5}{8}$   $\frac{2}{4}$   $\frac{3}{8}$   $\frac{1}{4}$   $\frac{3}{8}$   $\frac{9}{8}$



564

574

19

(ammann)

584

1/4 2/4 5/8 7/8 3/4 2/4 3/8 2/4

8

7

6

5

4

3

2

1

594

2/4 1/4 3/4 2/4 5/8 1/4 3/8 5/8 7/8

8

7

6

5

4

3

2

1

604

20

613

(ammann)

621  $\frac{1}{4}$   $\frac{2}{4}$   $\frac{5}{8}$   $\frac{2}{4}$   $\frac{4}{4}$   $\frac{1}{4}$   $\frac{2}{4}$   $\frac{3}{8}$   $\frac{5}{8}$   $\frac{1}{4}$   $\frac{2}{4}$

631  $\frac{2}{4}$   $\frac{5}{8}$   $\frac{3}{4}$   $\frac{1}{4}$   $\frac{2}{4}$   $\frac{3}{8}$   $\frac{3}{4}$   $\frac{3}{8}$   $\frac{2}{4}$