

MILOS RAICKOVICH

**PERMUTATIONS V,
“Sound of the White Hole”**

(from the cycle *PERMUTATIONS*)

for 6 instruments
(keyboards and mallets)
with optional conductor

(1978)

SCORE and PARTS

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PERMUTATIONS V, "Sound of the White Hole" (from the cycle *PERMUTATIONS*)
for 6 instruments (keyboards and mallets), with optional conductor (1978)

PERFORMANCE INSTRUCTIONS

The 6 instruments should be all of a different timbre, preferably including the piano, electric (or electronic) piano, other keyboards, marimba, vibraphone, or other, similar instruments. The six performers are performing the same rhythmical pattern throughout the piece, in a medium, relaxed tempo.

The Score consists of a set of 720 permutations of six notes: C, D, E, G, A, H. (The pitch "H" is the German name for the B-natural.) The first two measures of the piece, written in the score in the vertical order, from the top down, are:

CDE GAH,

CDE GHA,

These two opening measures (and every other measure, till the end of the piece) should be played like this:

The musical score consists of six staves, labeled VI through I from top to bottom. Each staff is in treble clef with a 2/4 time signature. The first measure of each staff contains a sequence of six eighth notes, with a '6' above the notes. The second measure contains a sequence of six eighth notes, with a 'G' above the notes. Dynamics are indicated as *pp* for the first measure and *p* for the second measure. The instruments IV, III, II, and I have a double slash (//) in the second measure, indicating they are silent.

The preferable way of playing is alternating the right hand (one note) and the left hand (next note) constantly, throughout the piece.

Each measure of the piece represents a different orchestration of the 6-note chord (cluster). There are 720 measures, corresponding to all possible permutations. The first letter in each measure of the Score represents the note for Performer I (for example, in CDE GAH, it's the note C), the second letter (D) is the note for Performer II, etc. Performer VI is changing the notes most often (every measure), while Performer I changes at the slowest pace (one note per every page of the score). In the Score, the measures are written in groups of six, but there is no break in the performance, which is continuous, till the end. The start of each group of six measures should be discreetly indicated by the conductor (or one of the performers, in case there is no conductor).

The conductor serves as a coordinator, marking every six measures. Also, the start of each vertical column should be indicated by the conductor, as well as the start of each page of the score--each with a different sign. There is no need to conduct the meter (measures).

The Performers can choose to perform either from the Score or from the Parts.

If performing from the Score, each performer should read his/her vertical column of letters (notes).

The performers also have **Parts** that indicate only the pitch changes for each performer, not the duration. Since the Performer I plays only the note C during the first page of the Score, it is necessary for him/her to get the sign from the conductor when the next page of the Score (and the new note) will start. The same for the Performer No. II: it is necessary to give him/her the indication of the start of every change in pitch (every new vertical column in the Score).

Duration is ca. 35 minutes. Shorter versions can be performed by omitting pages of the score.

SCORE

CDE GAH,
 CDE GHA,
 CDE AGH,
 CDE AHG,
 CDE HGA,
 CDE HAG,

CED GAH,
 CED GHA,
 CED AGH,
 CED AHG,
 CED HGA,
 CED HAG,

CGD EAH,
 CGD EHA,
 CGD AEH,
 CGD AHE,
 CGD HEA,
 CGD HAE,

CAD EGH,
 CAD EHG,
 CAD GEH,
 CAD GHE,
 CAD HEG,
 CAD HGE,

CHD EGA,
 CHD EAG,
 CHD GEA,
 CHD GAE,
 CHD AEG,
 CHD AGE,

CDG EAH,
 CDG EHA,
 CDG AEH,
 CDG AHE,
 CDG HEA,
 CDG HAE,

CEG DAH,
 CEG DHA,
 CEG ADH,
 CEG AHD,
 CEG HDA,
 CEG HAD,

CGE DAH,
 CGE DHA,
 CGE ADH,
 CGE AHD,
 CGE HDA,
 CGE HAD,

CAE DGH,
 CAE DHG,
 CAE GDH,
 CAE GHD,
 CAE HDG,
 CAE HGD,

CHE DGA,
 CHE DAG,
 CHE GDA,
 CHE GAD,
 CHE ADG,
 CHE AGD,

CDA EGH,
 CDA EHG,
 CDA GEH,
 CDA GHE,
 CDA HEG,
 CDA HGE,

CEA DGH,
 CEA DHG,
 CEA GDH,
 CEA GHD,
 CEA HDG,
 CEA HGD,

CGA DEH,
 CGA DHE,
 CGA EDH,
 CGA EHD,
 CGA HDE,
 CGA HED,

CAG DEH,
 CAG DHE,
 CAG EDH,
 CAG EHD,
 CAG HDE,
 CAG HED,

CHG DEA,
 CHG DAE,
 CHG EDA,
 CHG EAD,
 CHG ADE,
 CHG AED,

CDH EGA,
 CDH EAG,
 CDH GEA,
 CDH GAE,
 CDH AEG,
 CDH AGE,

CEH DGA,
 CEH DAG,
 CEH GDA,
 CEH GAD,
 CEH ADG,
 CEH AGD,

CGH DEA,
 CGH DAE,
 CGH EDA,
 CGH EAD,
 CGH ADE,
 CGH AED,

CAH DEG,
 CAH DGE,
 CAH EDG,
 CAH EGD,
 CAH GDE,
 CAH GED,

CHA DEG,
 CHA DGE,
 CHA EDG,
 CHA EGD,
 CHA GDE,
 CHA GED,

DCE GAH,
DCE GHA,
DCE AGH,
DCE AHG,
DCE HGA,
DCE HAG,

DEC GAH,
DEC GHA,
DEC AGH,
DEC AHG,
DEC HGA,
DEC HAG,

DGC EAH,
DGC EHA,
DGC AEH,
DGC AHE,
DGC HEA,
DGC HAE,

DAC EGH,
DAC EHG,
DAC GEH,
DAC GHE,
DAC HEG,
DAC HGE,

DHC EGA,
DHC EAG,
DHC GEA,
DHC GAE,
DHC AEG,
DHC AGE,

DCG EAH,
DCG EHA,
DCG AEH,
DCG AHE,
DCG HEA,
DCG HAE,

DEG CAH,
DEG CHA,
DEG ACH,
DEG AHC,
DEG HCA,
DEG HAC,

DGE CAH,
DGE CHA,
DGE ACH,
DGE AHC,
DGE HCA,
DGE HAC,

DAE CGH,
DAE CHG,
DAE GCH,
DAE GHC,
DAE HCG,
DAE HGC,

DHE CGA,
DHE CAG,
DHE GCA,
DHE GAC,
DHE ACG,
DHE AGC,

DCA EGH,
DCA EHG,
DCA GEH,
DCA GHE,
DCA HEG,
DCA HGE,

DEA CGH,
DEA CHG,
DEA GCH,
DEA GHC,
DEA HCG,
DEA HGC,

DGA CEH,
DGA CHE,
DGA ECH,
DGA EHC,
DGA HCE,
DGA HEC,

DAG CEH,
DAG CHE,
DAG ECH,
DAG EHC,
DAG HCE,
DAG HEC,

DHG CEA,
DHG CAE,
DHG ECA,
DHG EAC,
DHG ACE,
DHG AEC,

DCH EGA,
DCH EAG,
DCH GEA,
DCH GAE,
DCH AEG,
DCH AGE,

DEH CGA,
DEH CAG,
DEH GCA,
DEH GAC,
DEH ACG,
DEH AGC,

DGH CEA,
DGH CAE,
DGH ECA,
DGH EAC,
DGH ACE,
DGH AEC,

DAH CEG,
DAH CGE,
DAH ECG,
DAH EGC,
DAH GCE,
DAH GEC,

DHA CEG,
DHA CGE,
DHA ECG,
DHA EGC,
DHA GCE,
DHA GEC,

ECD GAH,
 ECD GHA,
 ECD AGH,
 ECD AHG,
 ECD HGA,
 ECD HAG,

EDC GAH,
 EDC GHA,
 EDC AGH,
 EDC AHG,
 EDC HGA,
 EDC HAG,

EGC DAH,
 EGC DHA,
 EGC ADH,
 EGC AHD,
 EGC HDA,
 EGC HAD,

EAC DGH,
 EAC DHG,
 EAC GDH,
 EAC GHD,
 EAC HDG,
 EAC HGD,

EHC DGA,
 EHC DAG,
 EHC GDA,
 EHC GAD,
 EHC ADG,
 EHC AGD,

ECG DAH,
 ECG DHA,
 ECG ADH,
 ECG AHD,
 ECG HDA,
 ECG HAD,

EDG CAH,
 EDG CHA,
 EDG ACH,
 EDG AHC,
 EDG HCA,
 EDG HAC,

EGD CAH,
 EGD CHA,
 EGD ACH,
 EGD AHC,
 EGD HCA,
 EGD HAC,

EAD CGH,
 EAD CHG,
 EAD GCH,
 EAD GHC,
 EAD HCG,
 EAD HGC,

EHD CGA,
 EHD CAG,
 EHD GCA,
 EHD GAC,
 EHD ACG,
 EHD AGC,

ECA DGH,
 ECA DHG,
 ECA GDH,
 ECA GHD,
 ECA HDG,
 ECA HGD,

EDA CGH,
 EDA CHG,
 EDA GCH,
 EDA GHC,
 EDA HCG,
 EDA HGC,

EGA CDH,
 EGA CHD,
 EGA DCH,
 EGA DHC,
 EGA HCD,
 EGA HDC,

EAG CDH,
 EAG CHD,
 EAG DCH,
 EAG DHC,
 EAG HCD,
 EAG HDC,

EHG CDA,
 EHG CAD,
 EHG DCA,
 EHG DAC,
 EHG ACD,
 EHG ADC,

ECH DGA,
 ECH DAG,
 ECH GDA,
 ECH GAD,
 ECH ADG,
 ECH AGD,

EDH CGA,
 EDH CAG,
 EDH GCA,
 EDH GAC,
 EDH ACG,
 EDH AGC,

EGH CDA,
 EGH CAD,
 EGH DCA,
 EGH DAC,
 EGH ACD,
 EGH ADC,

EAH CDG,
 EAH CGD,
 EAH DCG,
 EAH DGC,
 EAH GCD,
 EAH GDC,

EHA CDG,
 EHA CGD,
 EHA DCG,
 EHA DGC,
 EHA GCD,
 EHA GDC,

GCD EAH,
 GCD EHA,
 GCD AEH,
 GCD AHE,
 GCD HEA,
 GCD HAE,

GDC EAH,
 GDC EHA,
 GDC AEH,
 GDC AHE,
 GDC HEA,
 GDC HAE,

GEC DAH,
 GEC DHA,
 GEC ADH,
 GEC AHD,
 GEC HDA,
 GEC HAD,

GAC DEH,
 GAC DHE,
 GAC EDH,
 GAC EHD,
 GAC HDE,
 GAC HED,

GHC DEA,
 GHC DAE,
 GHC EDA,
 GHC EAD,
 GHC ADE,
 GHC AED,

GCE DAH,
 GCE DHA,
 GCE ADH,
 GCE AHD,
 GCE HDA,
 GCE HAD,

GDE CAH,
 GDE CHA,
 GDE ACH,
 GDE AHC,
 GDE HCA,
 GDE HAC,

GED CAH,
 GED CHA,
 GED ACH,
 GED AHC,
 GED HCA,
 GED HAC,

GAD CEH,
 GAD CHE,
 GAD ECH,
 GAD EHC,
 GAD HCE,
 GAD HEC,

GHD CEA,
 GHD CAE,
 GHD ECA,
 GHD EAC,
 GHD ACE,
 GHD AEC,

GCA DEH,
 GCA DHE,
 GCA EDH,
 GCA EHD,
 GCA HDE,
 GCA HED,

GDA CEH,
 GDA CHE,
 GDA ECH,
 GDA EHC,
 GDA HCE,
 GDA HEC,

GEA CDH,
 GEA CHD,
 GEA DCH,
 GEA DHC,
 GEA HCD,
 GEA HDC,

GAE CDH,
 GAE CHD,
 GAE DCH,
 GAE DHC,
 GAE HCD,
 GAE HDC,

GHE CDA,
 GHE CAD,
 GHE DCA,
 GHE DAC,
 GHE ACD,
 GHE ADC,

GCH DEA,
 GCH DAE,
 GCH EDA,
 GCH EAD,
 GCH ADE,
 GCH AED,

GDH CEA,
 GDH CAE,
 GDH ECA,
 GDH EAC,
 GDH ACE,
 GDH AEC,

GEH CDA,
 GEH CAD,
 GEH DCA,
 GEH DAC,
 GEH ACD,
 GEH ADC,

GAH CDE,
 GAH CED,
 GAH DCE,
 GAH DEC,
 GAH ECD,
 GAH EDC,

GHA CDE,
 GHA CED,
 GHA DCE,
 GHA DEC,
 GHA ECD,
 GHA EDC,

ACD EGH,
ACD EHG,
ACD GEH,
ACD GHE,
ACD HEG,
ACD HGE,

ADC EGH,
ADC EHG,
ADC GEH,
ADC GHE,
ADC HEG,
ADC HGE,

AEC DGH,
AEC DHG,
AEC GDH,
AEC GHD,
AEC HDG,
AEC HGD,

AGC DEH,
AGC DHE,
AGC EDH,
AGC EHD,
AGC HDE,
AGC HED,

AHC DEG,
AHC DGE,
AHC EDG,
AHC EGD,
AHC GDE,
AHC GED,

ACE DGH,
ACE DHG,
ACE GDH,
ACE GHD,
ACE HDG,
ACE HGD,

ADE CGH,
ADE CHG,
ADE GCH,
ADE GHC,
ADE HCG,
ADE HGC,

AED CGH,
AED CHG,
AED GCH,
AED GHC,
AED HCG,
AED HGC,

AGD CEH,
AGD CHE,
AGD ECH,
AGD EHC,
AGD HCE,
AGD HEC,

AHD CEG,
AHD CGE,
AHD ECG,
AHD EGC,
AHD GCE,
AHD GEC,

ACG DEH,
ACG DHE,
ACG EDH,
ACG EHD,
ACG HDE,
ACG HED,

ADG CEH,
ADG CHE,
ADG ECH,
ADG EHC,
ADG HCE,
ADG HEC,

AEG CDH,
AEG CHD,
AEG DCH,
AEG DHC,
AEG HCD,
AEG HDC,

AGE CDH,
AGE CHD,
AGE DCH,
AGE DHC,
AGE HCD,
AGE HDC,

AHECDG,
AHE CGD,
AHE DCG,
AHE DGC,
AHE GCD,
AHE GDC,

ACH DEG,
ACH DGE,
ACH EDG,
ACH EGD,
ACH GDE,
ACH GED,

ADH CEG,
ADH CGE,
ADH ECG,
ADH EGC,
ADH GCE,
ADH GEC,

AEH CDG,
AEH CGD,
AEH DCG,
AEH DGC,
AEH GCD,
AEH GDC,

AGH CDE,
AGH CED,
AGH DCE,
AGH DEC,
AGH ECD,
AGH EDC,

AHG CDE,
AHG CED,
AHG DCE,
AHG DEC,
AHG ECD,
AHG EDC,

HCD EGA,
HCD EAG,
HCD GEA,
HCD GAE,
HCD AEG,
HCD AGE,

HDC EGA,
HDC EAG,
HDC GEA,
HDC GAE,
HDC AEG,
HDC AGE,

HEC DGA,
HEC DAG,
HEC GDA,
HEC GAD,
HEC ADG,
HEC AGD,

HGC DEA,
HGC DAE,
HGC EDA,
HGC EAD,
HGC ADE,
HGC AED,

HAC DEG,
HAC DGE,
HAC EDG,
HAC EGD,
HAC GDE,
HAC GED,

HCE DGA,
HCE DAG,
HCE GDA,
HCE GAD,
HCE ADG,
HCE AGD,

HDE CGA,
HDE CAG,
HDE GCA,
HDE GAC,
HDE ACG,
HDE AGC,

HED CGA,
HED CAG,
HED GCA,
HED GAC,
HED ACG,
HED AGC,

HGD CEA,
HGD CAE,
HGD ECA,
HGD EAC,
HGD ACE,
HGD AEC,

HAD CEG,
HAD CGE,
HAD ECG,
HAD EGC,
HAD GCE,
HAD GEC,

HCG DEA,
HCG DAE,
HCG EDA,
HCG EAD,
HCG ADE,
HCG AED,

HDG CEA,
HDG CAE,
HDG ECA,
HDG EAC,
HDG ACE,
HDG AEC,

HEG CDA,
HEG CAD,
HEG DCA,
HEG DAC,
HEG ACD,
HEG ADC,

HGE CDA,
HGE CAD,
HGE DCA,
HGE DAC,
HGE ACD,
HGE ADC,

HAE CDG,
HAE CGD,
HAE DCG,
HAE DGC,
HAE GCD,
HAE GDC,

HCA DEG,
HCA DGE,
HCA EDG,
HCA EGD,
HCA GDE,
HCA GED,

HDA CEG,
HDA CGE,
HDA ECG,
HDA EGC,
HDA GCE,
HDA GEC,

HEA CDG,
HEA CGD,
HEA DCG,
HEA DGC,
HEA GCD,
HEA GDC,

HGA CDE,
HGA CED,
HGA DCE,
HGA DEC,
HGA ECD,
HGA EDC,

HAG CDE,
HAG CED,
HAG DCE,
HAG DEC,
HAG ECD,
HAG EDC.

PARTS

I

C

D

E

G

A

H

II

D	C	C	C	C	C
E	E	D	D	D	D
G	G	G	E	E	E
A	A	A	A	G	G
H	H	H	H	H	A

III

E	E	D	D	D	D
G	G	G	E	E	E
A	A	A	A	G	G
H	H	H	H	H	A
D	C	C	C	C	C
G	G	G	E	E	E
A	A	A	A	G	G
H	H	H	H	H	A
D	C	C	C	C	C
E	E	D	D	D	D
A	A	A	A	G	G
H	H	H	H	H	A
D	C	C	C	C	C
E	E	D	D	D	D
G	G	G	E	E	E
H	H	H	H	H	A
D	C	C	C	C	C
E	E	D	D	D	D
G	G	G	E	E	E
A	A	A	A	G	G

G A H	G A H	G A H	E A H	E G H	E G A
E A H	E A H	D A H	D A H	D G H	D G A
E G H	E G H	D G H	D E H	D E H	D E A
E G A	E G A	D G A	D E A	D E G	D E G

G A H	G A H	G A H	E A H	E G H	E G A
D A H	C A H	C A H	C A H	C G H	C G A
D G H	C G H	C G H	C E H	C E H	C E A
D G A	C G A	C G A	C E A	C E G	C E G

E A H	E A H	D A H	D A H	D G H	D G A
D A H	C A H	C A H	C A H	C G H	C G A
D E H	C E H	C D H	C D H	C D H	C D A
D E A	C E A	C D A	C D A	C D G	C D G

E G H	E G H	D G H	D E H	D E G	D E A
D G H	C G H	C G H	C E H	C E H	C E A
D E H	C E H	C D H	C D H	C D H	C D A
D E G	C E G	C D G	C D E	C D E	C D E

E G A	E G A	D G A	D E A	D E G	D E G
D G A	C G A	C G A	C E A	C E G	C E G
D E A	C E A	C D A	C D A	C D G	C D G
D E G	C E G	C D G	C D E	C D E	C D E

A H G H G A	A H G H G A	A H G H G A	G H E H E G	G A E A E G
A H E H E A	A H G H G A	A H D H D A	G H D H D G	G A D A D G
G H E H E G	A H E H E A	G H D H D G	E H D H D E	E A D A D E
G A E A E G	G H E H E G	G A D A D G	E G D G D E	E G D G D E
	G A E A E G			

A H G H G A	A H G H G A	A H G H G A	G H E H E G	G A E A E G
A H D H D A	A H G H G A	A H C H C A	G H C H C G	G A C A C G
G H D H D G	A H C H C A	G H C H C G	E H C H C E	E A C A C E
G A D A D G	G H C H C G	G A C A C G	E G C G C E	E G C G C E
	G A C A C G			

A H E H E A	A H E H E A	A H D H D A	G H D H D G	G A D A D G
A H D H D A	A H E H E A	A H C H C A	G H C H C G	G A C A C G
E H D H D E	A H C H C A	D H C H C D	D H C H C D	D A C A C D
E A D A D E	E H C H C E	D A C A C D	D G C G C D	D G C G C D
	E A C A C E		D A C A C D	

G H E H E G	G H E H E G	G H D H D G	E G D G D E	E A D A D E
G H D H D G	G H E H E G	G H C H C G	E H D H D E	E A C A C E
E H D H D E	G H C H C G	D H C H C D	E H C H C E	D A C A C D
E G D G D E	E H C H C E	D G C G C D	D H C H C D	D E C E C D
	E G C G C E		D E C E C D	

G A E A E G	G A E A E G	G A D A D G	E G D G D E	E G D G D E
G A D A D G	G A E A E G	G A C A C G	E A D A D E	E G C G C E
E A D A D E	G A C A C G	D A C A C D	E A C A C E	D G C G C D
E G D G D E	E A C A C E	D G C G C D	D A C A C D	D E C E C D
	E G C G C E		D E C E C D	

H A H G A G		H A H G A G		H G H E G E	
H A H E A E	H A H G A G	H A H D A D	H A H E A E	H G H D E D	A G A E G E
H G H E G E	H A H E A E	H G H D G D	H A H D A D	H E H D E D	A G A D G D
A G A E G E	H G H E G E	A G A D G D	H E H D E D	G E G D E D	A E A D E D
	A G A E G E		A E A D E D		G E G D E D

H A H G A G		H A H G A G		H G H E G E	
H A H D A D	H A H G A G	H A H C A C	H A H E A E	H G H C G C	A G A E G E
H G H D G D	H A H C A C	H G H C G C	H A H C A C	H E H C E C	A G A C G C
A G A D G D	H G H C G C	A G A C G C	H E H C E C	G E G C E C	A E A C E C
	A G A C G C		A E A C E C		G E G C E C

H A H E A E		H A H D A D		H G H D G D	
H A H D A D	H A H E A E	H A H C G C	H A H D A D	H G H C G C	A G A D G D
H E H D E D	H A H C A C	H D H C D C	H A H C A C	H D H C D C	A G A C G C
A E A D E D	H E H C E C	A D A C D C	H D H C D C	G D G C D C	A D A C D C
	A E A C E C		A D A C D C		G D G C D C

H G H E G E		H G H D G D		G E G D E D	
H G H D G D	H G H E G E	H G H C G C	H E H D E D	H E H C E C	A E A D E D
H E H D E D	H G H C G C	H D H C D C	H E H C E C	H D H C D C	A E A C E C
G E G D E D	H G H C E C	G D G C D C	H D H C D C	E D E C D C	A D A C D C
	G E G C E C		E D E C D C		E D E C D C

A G A E G E		A G A D G D		G E G D E D	
A G A D G D	A G A E G E	A G A C G C	A E A D E D	G E G C E C	G E G D E D
A E A D E D	A G A C G C	A D A C D C	A E A C E C	G D G C D C	G E G C E C
G E G D E D	A E A C E C	G D G C D C	A D A C D C	E D E C D C	G D G C D C
	G E G C E C		E D E C D C		E D E C D C