Chess : positions of cyclic zugzwang with not more than five men

JDB reporting work by Galen Huntington, Árpád Rusz, and the late Guy Haworth

This document describes a file CZUG45.PGN which is believed to contain all chess positions with not more than five men which are cyclic zugzwang (the side to move can win, but against at least one defence only by returning to the same position with the other side to move). It contains 1,135 positions.

Presentation

The file has been designed for use and display by ChessBase and similar programs. As displayed in a ChessBase list, the men and their positions are shown under White and Black, a summary of the men involved under Tournament, the result as seen by White under Result, and the length of the path back to the original position (the length of the longest path if there are several) under Moves. If the numbers of men are unequal, White is given the larger number, so if it is the side with the smaller number which wins (as for example with queen against bishop and knight) the first move is given to Black and the result is recorded as a Black win. The play displays only the line or lines which force the winner to return to the starting position, and these may not include the line which holds out longest.

Technical report

The work is described in a paper "Position Criticality: Cyclic Zugzwangs in sub-6-man Chess" which has been posted on the Orthodox Chess / Endgames page of www.jsbeasley.co.uk.

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Statistical summary

	KQ	KR	KB	KN	KP	Total							
KQ	0	0	0	0	0	0							
KR		0	1	1	0	2							
KB			0	0	0	0							
KN				0	0	0							
KP					0	0							
'otal	0	0	1	1	0	2							
lumbers	of thre	ee-agali	nst-one	cyclic	zugzwa	ngs							
KNP	1												
otal?	1												
Otal	1 of thre	ee-agai	nst-two	cyclic	zugzwa	ngs (wins f	or the three	e men	on the	left, fo	r the	two men	on the r
otal Jumbers	1 of thre KQ	ee-agai: KR	nst-two KB	cyclic KN	zugzwa KP	ngs (wins f Total	or the three	e men KQ	on the KR	left, fo KB	r the KN	two men KP	on the r Total
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Yotal Jumbers KQQ KQR KQB KQN KQP KRR	1 of three KQ 0 3 4 60 0	ee-agai: KR 0 0 0 0 0 0 0 0	nst-two KB 0 0 0 0 0 0 0	cyclic KN 0 0 0 0 0 0 0	zugzwa KP 0 0 0 0 0 0 0	ngs (wins f Total 0 3 4 60 0	or the three KQQ KQR KQB KQN KQP KRR	e men KQ 0 0 0 0 0 1	on the KR 0 0 0 0 0 0 0	left, fo KB 0 0 0 0 0 0 0 0	r the KN 0 0 0 0 0 0	two men KP 0 0 0 0 0 0	on the r Total 0 0 0 0 0 1
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KPP

Total

2.62

Total number of cyclic zugzwangs: 1135

251 |

KPF

Total