Commutative graph

ZI

ZZ

XX YY

XI YI

final partitions →
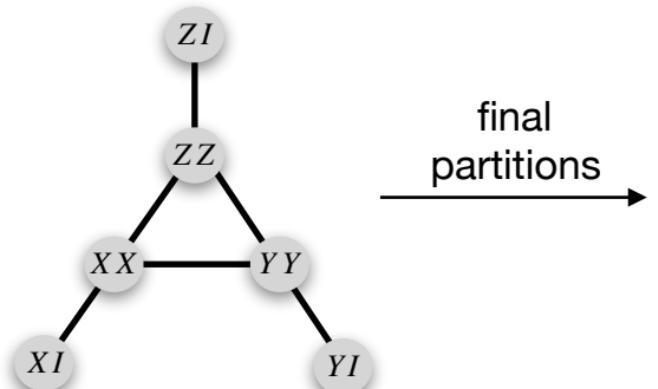
Solution

$x_1 = 0,$

$x_2 = 1 \rightarrow C_2 = \{XX, XI\},$

$x_3 = 1 \rightarrow C_3 = \{YY, YI\},$

$x_4 = 1 \rightarrow C_4 = \{ZZ, ZI\}.$

algorithm 4 workflow

Maximal Cliques

$C_1 = \{XX, YY, ZZ\}$

$C_2 = \{XX, XI\}$

$C_3 = \{YY, YI\}$

$C_4 = \{ZZ, ZI\}$

MCC-ILP

$min \quad x_1 + x_2 + x_3 + x_4$

$s.t. \quad x_1 + x_2 \geq 1,$

$\quad\quad\quad x_1 + x_3 \geq 1,$

$\quad\quad\quad x_1 + x_4 \geq 1,$

$\quad\quad\quad x_2 \geq 1, \ x_3 \geq 1, \ x_4 \geq 1.$