

1030-05-291

Drago Bokal, **Éva Czabarka** and **László A. Székely*** (szekely@math.sc.edu), USC,
Department of Mathematics, Columbia, SC 29208, and **Imrich Vrt'o**. *On the minor crossing
number.*

Unfortunately, the crossing number is not a minor monotone graph parameter. To overcome this difficulty, Bokal, Fijavž and Mohar introduced the *minor crossing number*: having a fixed surface, the minor crossing number of a graph G is the least crossing number of graphs of which G is a minor.

We adapt three general lower bound techniques for the crossing number to the minor crossing number, namely the Crossing Lemma, the bisection width method and the embedding method, and as a consequence, we improve the bounds on the minor crossing number of the hypercube.

We define the string crossing number of graphs as follows: represent the vertices of the graph by simple curves, such that edges corresponding to adjacent vertices must cross. Minimize the total number of crossings in the drawing. We show that the string crossing number is closely related to the minor crossing number. (Received August 06, 2007)