

# INTEGRITY OF GRIDS

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The integrity  $I(G)$  of a graph  $G$  is defined as follows

$$I(G) = \min\{m(G - S) + |S| : S \subset V(G)\},$$

where  $m(H)$  denotes the order of a largest component of  $H$ . This concept was introduced by Barefoot, Entringer, and Swart [3] inspired by the idea to measure a computer network's vulnerability.

In particular, in [1] the integrity of  $P_2 \square P_n$  was computed, where ' $\square$ ' denotes the Cartesian product of two graphs. In [2] it was stated that it would be very interesting to learn the integrity of general products of paths. It is known, see [4], that  $I(P_m \square P_n) = \Theta((mn)^{2/3})$  if  $m \geq 2\sqrt{n}$ , and  $I(P_m \square P_n) = \Theta(m \cdot n^{1/2})$  if  $m < 2\sqrt{n}$ . In the talk we will establish the exact value asymptotically.

## References

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