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*Inducibility of Short Cycles*

In 1975, Pippinger and Golumbic conjectured that in graphs the maximum induced density of a  $k$ -cycle is  $\frac{k!}{k^k - k}$  when  $k \geq 5$ . The case of  $k = 5$  was solved recently by Balogh, Hu, L., Pfender. We show that it is possible to extend the result to other small  $k$ . The results are obtained using Flag algebras and stability. This is joint work with Pfender and Brandt.