1083-05-40 **Patrik Norén*** (`patrik.noren@aalto.fi`), Aalto University, Department of Mathematics, P.O. Box 11100, FI-00076 Helsinki, Finland, and **Alexander Engström** (`alexander.engstrom@aalto.fi`), Aalto University, Department of Mathematics, P.O. Box 11100, FI-00076 Helsinki, Finland. *Cellular resolutions of powers of edge ideals.* Preliminary report.

We study powers of edge ideals of graphs and their resolutions. For a large class of graphs, we construct new cellular resolutions for each power of the corresponding edge ideals. In many cases it is possible to use algebraic discrete Morse theory to make the cellular resolutions minimal. In particular, we give an explicit description of the minimal resolutions for all powers of edge ideals of paths. (Received August 06, 2012)

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