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Graceful Labellings of Variable Windmills Using Skolem Sequences

A windmill is a graph obtained by identifying a set of graphs (the "vanes") at a single common vertex. In this work, we introduce graceful and near graceful labellings of several families of windmills. In particular, we use Skolem-like sequences to prove (near) graceful labellings exist for all possible windmills with C_3 and C_4 vanes, and infinite families of 3,5-windmills and 3,6-windmills.

Joint work with Danny Dyer and Jared Howell.