We discuss ideals associated to the closure of conjugacy classes of nilpotent matrices. These ideals are indexed by partitions of the size of the matrix. We then restrict to the intersection of the conjugacy class with diagonal matrices, and use a well-known generating set by Tanisaki to produce a new and smaller generating set for these ideals. We also find a minimal generating set in the case of hook partitions, which enables us to easily compute the minimal free resolution.

This is joint work with Riccardo Biagioli and Mercedes Rosas.

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