

A global analogue of the Springer resolution for SL_2

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The global nilpotent cone N is a singular stack associated to the choice of an algebraic group G , a smooth projective curve X , and a line bundle L on X , which is of fundamental importance to the Geometric Langlands Program, and which is of emerging importance to the Classical Langlands Program. In analogy with the ordinary Springer resolution, we construct and study a resolution of singularities of N in the special case where $G=SL_2$. As an immediate application, we prove that N is equidimensional and also provide an enumeration of its irreducible components. We hope this is the first step in constructing a global Springer resolution for an arbitrary reductive group.

Comments: 30 pages, several sections partially re-written, typos fixed, a few mathematical errors corrected

Subjects: **Algebraic Geometry (math.AG)**; Representation Theory (math.RT)

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