Cerulli Irelli, Giovanni
Geometry of quiver Grassmannians of Dynkin type with applications to cluster algebras.
(English) [Zbl 1369.16021]
Krause, Henning (ed.) et al., Representation theory – Current trends and perspectives. In part based on
talks given at the last joint meeting of the priority program in Bad Honnef, Germany, in March 2015.

Summary: The paper includes a new proof of the fact that quiver Grassmannians associated with rigid
representations of Dynkin quivers do not have cohomology in odd degrees. Moreover, it is shown that
they do not have torsion in homology. A new proof of the Caldero-Chapoton formula is provided. As a
consequence a new proof of the positivity of cluster monomials in the acyclic clusters associated with
Dynkin quivers is obtained. The methods used here are based on joint works with M. Reineke and E.
Feigin [Algebra Number Theory 6, No. 1, 165–194 (2012; Zbl 1282.14083); J. Algebr. Comb. 38, No. 1,

For the entire collection see [Zbl 1357.14004].

MSC:
16G70 Auslander-Reiten sequences (almost split sequences) and Auslander-Reiten quivers
14N05 Projective techniques in algebraic geometry
13F60 Cluster algebras

Keywords:
quiver Grassmannians; Dynkin quivers; cluster algebras

Full Text: arXiv