

1086-22-2474

Jordan Alexander* (jordan_alexander@baylor.edu), **Markus Hunziker** and **Jeb F. Willenbring**. *Hilbert series of determinantal varieties and strongly orthogonal roots*. Preliminary report.

The coordinate rings of the classical determinantal varieties (and their analogs for symmetric and skew-symmetric matrices) carry the structure of a unitary highest weight representation via Howe duality. We use this fact and a modified Enright-Willenbring correspondence between Wallach representations and certain finite dimensional representations to give a uniform formula for the numerator polynomials of the Hilbert series of all determinantal varieties. The key is a combinatorial phenomenon for Hermitian symmetric spaces. (Received September 25, 2012)