Kostant's version of the Bott-Borel-Weil theorem

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Abstract:

Kostant's version of the Bott-Borel-Weil theorem gives a complete description of a large class of Lie algebra cohomology groups which arise in parabolic geometry. This description is in terms of the associated Hasse diagram and gives an efficient combinatorial algorithm for the computation of these cohomologies. As an application, I will show how to compute that the (harmonic) curvature associated to generic rank 2 distributions on 5-manifolds takes values in the space of binary quartics, which recovers a well-known result from Cartan's 5-variables paper.