Equivariant formality of isotropy action on a homogeneous space with rank difference one

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Let H be a closed connected subgroup of a compact connected Lie group G. If rank(G) = rank(H), it is well known that the rational cohomology of G/H concentrates in even degrees hence the isotropy action of H on G/H is equivariantly formal. In this talk, we will consider the case where rank(G) - rank(H) = 1 and give a characterization of equivariantly formal isotropy action in this case. This work is joint with Jeffrey Carlson.