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Chen He* (hechen123@gmail.com). *Equivariant formality of isotropy action on a homogeneous space with rank difference one.*

Let G be a compact connected Lie group and H be a closed connected subgroup. If $\text{rank}(G) = \text{rank}(H)$, 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 $\text{rank}(G) - \text{rank}(H) = 1$ and give a characterization of equivariantly formal isotropy action in this case. We will identify all the corank-one non-isotropy-formal pairs (G, H) up to certain reductions. This work is joint with Jeffrey Carlson. (Received January 23, 2022)