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Equivariant formality, a notion in equivariant topology introduced by Goresky-Kottwitz-Macpherson, is a desirable property of spaces with group actions. Broad classes of spaces of especial interest are well-known to be equivariantly formal, e.g., compact symplectic manifolds equipped with Hamiltonian compact Lie group actions and projective varieties equipped with linear algebraic torus actions, of which flag varieties are examples. Less is known about compact homogeneous spaces G/K equipped with the isotropy action of K , which is not necessarily of maximal rank. In this talk we will review previous attempts of characterizing equivariant formality of G/K , and present our recent results on this problem using an analogue of equivariant formality in K -theory. Part of the work presented in this talk is joint with Jeffrey Carlson. (Received September 26, 2017)