Equivariant transversality and K-theoretic positivity

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In joint work with Steve Griffeth and Dave Anderson, we prove positivity of the structure constants for multiplication, with respect to Schubert bases, in the equivariant K-theory of complex homogeneous spaces. This settles, in the affirmative, conjectures by Graham and Kumar and by Griffeth and Ram, generalizing the equivariant cohomology result by Graham and the ordinary K-theory result by Brion. Our proof develops K-theoretic Kleiman transversality in the equivariant setting by applying Sierra's homological transversality, for spaces with nontransitive group actions, to auxiliary actions on Borel mixing spaces.