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Ragnarsson Kari* (kragnars@math.depaul.edu), Department of Mathematical Sciences, 2320 N. Kenmore Avenue, Chicago, IL 60614. *Stable splittings of classifying spaces.*

Let S be a finite p -group. A long-standing question asks when a stable summand of BS is the p -completed classifying space of a finite group G that has S as Sylow subgroup. As the p -local stable homotopy type of BG is determined by its fusion system (the category with objects the subgroups of S and morphisms induced by conjugation in G) it makes sense to extend this question and ask when a stable summand of BS is the classifying spectrum of a (possibly exotic) fusion system on S . In this talk I will show how applying recent joint work with Radu Stancu gives a surprising, simple answer to this question. Specifically, a stable summand of BS is the classifying spectrum of a saturated fusion system if and only if the corresponding idempotent in the double Burnside ring of S satisfies a simple self-linearity equation, closely linked with Frobenius reciprocity. (Received August 26, 2009)