Fusion Stable Burnside Rings

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Let p be a prime. Fusion systems on a finite p-group S are a generalisation of the p-local structure given by a finite group G on S, when S is a subgroup of G. For a fusion system $\mathcal{F}$ on S there are associated stable Burnside rings. When $\mathcal{F}$ is saturated - corresponding to the situation where S is a Sylow p-subgroup of G - the associated stable Burnside rings possess very strong properties. For example, the monoide of $\mathcal{F}$-stable S-sets is free. We show that this is not the case outside of the saturated world and we look for families of p-groups where some of these properties are still true. The talk presents a joint work - in progress - with Aktham Mulla Mohamad.