Noncommutative Geometry Models for Particle Physics

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Abstract. Based on recent joint work with A. Chamseddine and A. Connes, I will describe how noncommutative geometry can be used to construct particle physics models that enrich the minimal standard model with right handed neutrinos and Majorana mass terms and with gravity terms, in such a way that the full Lagrangian can be computed from the asymptotic expansion of the spectral action on an almost commutative space. I will describe some possible cosmological implications of the model based on ongoing work with E. Pierpaoli.