Symmetry of solutions to semilinear PDEs on (isoparametric) Riemannian domains

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This talk aims to introduce an appropriate notion of symmetry for Riemannian domains (and for functions) and to show some symmetry results for solutions to semilinear PDEs on such domains. In particular, we will see that stable solutions to the Dirichlet problem associated with the equation $\Delta u = f(u)$ are symmetric. From the beginning we will consider the setting of weighted Riemannian manifolds, giving an interpretation of symmetric domains that is, in some sense, compatible with the presence of the weight.

The talk is based on a joint work with Stefano Pigola.