Parabolic or non parabolic? New tricks to answer this question for solitons of the MCF and for solitons of the IMCF.

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Abstract. In this talk I will provide some geometric properties for solitons of the Mean Curvature Flow or for solitons of the Inverse Mean Curvature Flow in order to obtain recurrence or transience of the Brownian motion. Assuming parabolicity and other geometric assumptions I will show the rigidity of minimal submanifolds of the sphere when they are considered as solitons of the Inverse Mean Curvature Flow. **Joint work with V. Palmer.**