SEMINÁRIO DE EQUAÇÕES DIFERENCIAIS

A permutation encoding the connecting orbit structure of unbounded attractors

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Abstract: We consider non-dissipative dynamical systems generated by scalar reaction-diffusion equations. In particular, we address the recently introduced class known as slowly non-dissipative systems, which comprises those systems exhibiting blow-up only in infinite time. By extending known results, we are able to obtain a complete decomposition of the non-compact global attractor. The existence of unbounded trajectories on the attractor requires the introduction of some objects interpreted as equilibria at infinity, yielding a more complex orbit structure than that appearing on dissipative systems. Under this setting, we still manage to determine the heteroclinic connections based on the Sturm permutation method. This is a joint work with C. Rocha.