# Non-compact global attractors for a class of non-dissipative systems

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**Resumo:** We consider dynamical systems generated by a scalar semilinear parabolic equation. We consider a recently introduced class known as slowly non-dissipative systems [1], which comprises those with existence of solutions whose norms grow-up to infinity with time. When dealing with slowly non-dissipative systems, the existence of unbounded solutions, which are referred to as grow-up solutions, requires the introduction of some objects at infinity interpreted as equilibria at infinity. Moreover, the existence of these solutions yields a more complex orbit structure on the attractor than that appearing on dissipative systems. By extending known results, we obtain the existence and a description of a non-compact global attractor. Also, it is well known that there exists a permutation, introduced in [2], associated with dissipative systems that determines many of the main geometric features of the global attractor. For non-dissipative systems, the existence of equilibria at infinity add some significant challenges to obtain a similar permutation determining the heteroclinic connections on the non-compact global attractor. Under this setting, we still manage to determine the heteroclinic connections based on the Sturm permutation method. This provides a simpler criterion for describing the non-compact global attractor and generalize the results obtained for dissipative equation.

**palavras-chave:** slowly non-dissipative systems; grow-up; global attractor; Sturm permutation.

## Referências

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