A dynamical system approach for problems involving Pucci extremal operators

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Abstract

We will present some recent results obtained on the existence, nonexistence and classification of radial positive solutions of some weighted fully nonlinear equations involving Pucci extremal operators. Our study is entirely based on the analysis of the dynamics induced by an autonomous quadratic system which is obtained after a suitable transformation. This method allows to treat both regular and singular solutions in a unified way, without using energy arguments. Moreover, if time permits, we will comment on applying the same approach in order to study Lane-Emden type systems. These are works in collaboration with Gabrielle Nornberg (Universidad de Chile) and Filomena Pacella (Sapienza Università di Roma, Italy).