

The topic of this thesis is the convex hull property for systems of partial differential equations, which is a natural generalisation of the maximum principle for scalar equations. The main result of this thesis is a theorem asserting the convex hull property for the solutions of a certain class of parabolic systems of nonlinear partial differential equations. It also investigates the coefficients of linear systems. The respective results are sharp which is demonstrated by counterexamples to the convex hull property for solutions of linear elliptic and parabolic systems. The general theme is that the coupling of the system is what breaks the convex hull property, not necessarily the non-linearity.