

Increased stability in Cauchy problem for some partial differential equation

We show that for some elliptic and parabolic differential equations under some natural assumptions conditional stability of the continuation is improving when some lower order coefficients are growing, i.g. when drift term is properly directed and getting large. In proofs we use Fourier analysis and Carleman type estimates. We discuss related improved stability in some inverse problems including recovery of potential in a stationary Schrödinger equation at higher frequency. Better stability is crucial for applications (in particular for numerical solution) in control theory and inverse problems.