Comparison Principle for Weakly-coupled Non-cooperative Elliptic and Parabolic Systems

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In this talk we will consider the validity of comparison principle for linear and quasi-linear weakly coupled systems of elliptic and of parabolic PDE. The consept is based on the spectral properties of the system. Furthermore, comparison principle for the corresponding ellyptic system (when t is fixed) yields some local (w.r.t. t) conditions for the validity of comprison principle for the parabolic system. Some applications are given as well.

References

- Boyadzhiev, G., N. Kutev, Diffraction problems for quasilinear elliptic and parabolic systems, Nonlinear Analysis, Volume 55, Issue 7–8 (2003), 905–926
- Boyadzhiev, G. Comparison principle for non-cooperative elliptic systems, Nonlinear Analysis, Theory, Methods and Applications, 69 (11), (2008), 3838–3848.
- [3] Boyadzhiev, G. Existence of Classical Solutions of Linear Non-cooperative Elliptic Systems, C.R. Acad. Bulg. Sci., 68 (2), (2015), 159–164.