

Topics for the research assistant position (Ph.D.)

- Variational formulations in PDEs
- Maximum principles (Phragmén-Lindelöf maximum principle, Hopf boundary point lemma)
- First-order linear PDEs with constant and non-constant coefficients
- Methods to prove the existence of exact solutions to nonlinear PDEs (bifurcation methods, e.g. of Crandall-Rabinowitz type)
- Perturbative methods in PDEs (e.g. WKB method)
- Methods of harmonic analysis

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