

# Remarks on TopMath Mentoring

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This document contains a few remarks regarding TopMath and my possible role as a mentor. I would appreciate if you could read the document and take the remarks into account before contacting me. *Thank you!*

1. **General:** Overall, I am very happy to mentor strong students pursuing research in the framework of the TopMath program at TUM. It is one core competence of university education to bring students to work independently on open/unsolved problems. A doctoral thesis project must aim at *very deep understanding* of an open problem and contribute to its solution. For administrative questions regarding a TopMath application, the TUM mathematics website is going to direct you to the relevant documents.
2. **Topics:** My research lies at the *interface between several fields*. Therefore, I can supervise quite a wide range of topics. However, you should have strong interests in at least *one* of the following areas:
  - differential equations / dynamical systems (ODE, PDE, and/or dynamical systems)
  - probability / stochastic processes
  - geometry (differential and/or algebraic)
  - scientific computing / numerical analysis
  - modelling (network science, mathematical biology, and/or mathematical physics)
3. **First Contact:** After being accepted into TopMath, and suppose you are interested working with me, please make an appointment via e-mail.
4. **Further Meetings:** Once you have passed the intermediate TopMath exam, you will be fully integrated in the research group. This includes *regular group meetings*. These meetings take place weekly during semester time. Although listening to other researchers progress, problems, and topics every week may not sound immediately appealing to you, there is a long-term benefit of this type of format. I expect TopMath students mentored by me to take part regularly in these meetings.
5. **Language:** You are strongly encouraged to write the thesis in English.