ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO THE DOCTORAL SEMINAR

Data assimilation: theory, algorithms and applications

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Chaired by Barbara Kaltenbacher | Department of Statistics

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N.2.35

ABSTRACT

The seamless integration of large data sets into computational models is an important task relevant in a diverse range of applications. One of the major challenges is to address the intricacies of high-dimensional nonlinear filtering for complex and computationally demanding evolution models. Despite the prevalent deviation from underlying assumptions in numerous applications, Gaussian approximative filters are heralded as state-of-the-art solutions. Their successful implementation in highly nonlinear settings, characterized by expansive state spaces, underscores their significance. Recent studies have diligently demonstrated the efficacy of these filters in terms of tracking ability within nonlinear evolution models. In this discourse, we will present a noteworthy result, encapsulated in distinct bounds tailored for specific filter variants. While the robustness of Gaussian approximative filters is indisputable, there exists a palpable desire to craft filters capable of achieving heightened accuracy without compromising robustness and stability. This endeavor has sparked significant interest in the development of novel filters and we will discuss and present various novel approaches.

We hope to see you there!