

Mathematisches Institut
der Universität Bayreuth

Prof. Dr. V. Aizinger Prof. Dr. M. Bebendorf
Prof. Dr. K. Chudej Prof. Dr. L. Grüne
Prof. Dr. A. Schiela

95440 BAYREUTH
TEL: (0921) 55-3270
TELEFAX: (0921) 55-5361

BAYREUTH, DEN 17. DEZEMBER 2019

VORTRAGSANKÜNDIGUNG

Im Rahmen unseres gemeinsamen Oberseminars

„Numerische Mathematik, Optimierung und Dynamische Systeme“

spricht

Herr Dr. Johannes Pfefferer, Technische Universität München,
Fakultät für Mathematik

am **Montag, 13. Januar 2020**, 16 Uhr c. t. über das Thema

" hp -finite elements for fractional diffusion"

Abstract:

In this talk we introduce and analyze a numerical scheme based on hp -finite elements to solve boundary value problems involving the spectral fractional Laplacian. The approach is based on a reformulation of the problem posed on a semi-infinite cylinder in one more spatial dimension. After a suitable truncation of this cylinder, the resulting problem is discretized with linear finite elements in the original domain and with hp -finite elements in the extended direction. The proposed approach yields a reduction of the computational complexity in terms of degrees of freedom and even has slightly improved convergence properties compared to the state-of-the-art discretization using linear finite elements for both the original domain and the extended direction. The performance of the method is illustrated by numerical experiments.

Der Vortrag findet im Gebäude NW II, S 82 statt.

gez. Anton Schiela