INSTITUT FÜR ANGEWANDTE ANALYSIS UND NUMERISCHE SIMULATION

mathematik ians

Universität Stuttgart

$$\inf_{W\in\mathcal{W}(\mathcal{G})}\sup_{V\in\mathcal{V}(\mathcal{G})}\frac{\mathcal{B}[W,V]}{\|W\|_{\mathcal{W}}\|V\|_{\mathcal{V}}}>0$$

having a coffee in a Banach space makes you feel complete

Vortragsankündigung Oberseminar

Sommersemester 2018

16:30 Uhr im Seminarraum 7.122

$$f(u_+)-f(u_-)=s(u_+-u_-)$$

16.07.2018 **Lukas Ostrowski** (Universität Stuttgart)

Compressible Effects in Droplet Interaction with Textured Walls

Abstract: The reliable simulation of droplet impingement on perfect or rough walls is still a challenge. One issue in this context is the importance of compressible effects for even relatively small impact speeds. This has been studied for flat perfect walls, but much less has been done for textured or even porous walls, when micro-level structures affect the macroscopic flow field.

In this talk we present an approach to incorporate microscale effects due to surface roughness with help of a numerical upscaling procedure. We introduce the concept of phase field modelling, were we rely on a compressible Navier–Stokes–Allen–Cahn system. We develop a Discontinuous Galerkin scheme to simulate the macroscopic problem, discuss physical relevant boundary conditions and introduce our numerical upscaling approach.

Alle Interessenten sind herzlich eingeladen!

$$\|U-u\|_{\mathcal{W}}\leq\sqrt{2}\left(\sum_{E\in\mathcal{G}}\mathcal{E}_{\mathcal{G}}^2(U;E)\right)^{1/2}$$

$$\partial_t u+\operatorname{div}_x f(u)=0$$

```
39 typedef Dune::ACFem::MassModel<EllipticModelType> MassModelType;
40 MassModelType bareMassModel(implicitEllipticModel);
41
42 auto massModel(mu * (mat.Z_a) * J + mat.Z_w) * bareMassModel);
```

Die Professoren des Instituts für Angewandte Analysis und Numerische Simulation

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