

Übungsaufgaben zur Vorlesung "Numerik der Navier-Stokes Gleichungen"
Wintersemester 2017/18 - Blatt 2

1. Study the proof to Theorem 2.35, *Solutions of the Navier-Stokes equations*.
 - What is the essential step that requires to restrict the problem to the finite dimensional case and use the Galerkin-approach?
 - Why do we use Brouwer's fixed point theorem? Why do we not directly use the fixed point theorem of Banach?
 - Would it be possible to exchange Brouwer by Banach in step *v.2*? If so, would this make step (*v.4*) obsolete, i.e. would it directly show uniqueness?

Discussion in the class on Friday, January 19