Analysis Seminar

On the local and long-time solvabilities of the 3D Euler equations with Coriolis force

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Abstract. We consider the Euler equations in the rotational framework (ER). We show long-time solvability in Besov spaces for high speed of rotation Ω and arbitrary initial data. For that, we obtain Ω-uniform estimates and a blow-up criterion of BKM type in our setting. Our initial data class is larger than previous ones considered for (ER) and covers borderline cases of the regularity. The uniqueness of solutions is also discussed.

Joint work with Prof. Vladimir Angulo-Castillo (UNAL, Colombia).

AMS MSC: 35Q31, 76U05, 76B03, 35A07, 42B35

Key: Euler equations; Coriolis force; Long-time solvability; Blow up; Besov-spaces