

## 第 2 1 2 回 広島数理解析セミナー ( 2 0 1 7 年度 )

### Hiroshima Mathematical Analysis Seminar No.212

日時 : 5月12日(金) 16:30 ~ 17:30

場所 : 広島大学理学部 B707

講師 : 岸本 展 氏 ( 京都大学 )

題目 : Remark on global regularity for the rotating Navier-Stokes equations in a periodic domain

要旨 : We consider the rotating incompressible Navier-Stokes equations on a three-dimensional torus. In the periodic setting, Babin, Mahalov and Nicolaenko (1997, 1999) proved existence of global smooth solutions for large Coriolis parameters. Their proof was based on analysis of the limit equation, in which nonlinear interactions are restricted onto the “resonant” frequencies. In this talk, we give an improved estimate on the resonant interactions by counting the total number of nontrivial resonant frequencies via some combinatorial arguments. As an application, we show global regularity for the rotating Navier-Stokes equations with fractional Laplacian. This talk is based on a joint work with Tsuyoshi Yoneda (The University of Tokyo).

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