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Chongsheng Cao and **Yanqiu Guo*** (yanguo@fiu.edu), 11200 SW 8th Street, Miami, FL 33199, and **Edriss Titi**. *Global regularity for a rapidly rotating convection model of tall columnar structure with weak dissipation.*

This presentation is based on our analysis of a three-dimensional fluid model describing rapidly rotating convection that takes place in tall columnar structures. Global well-posedness for strong solutions is shown provided the model is regularized by a weak dissipation term. The main difficulty lies in the fact that the physical domain is three-dimensional, whereas the regularizing viscosity acts only on the horizontal variables. This is a joint project with C. Cao and E. Titi. (Received September 02, 2019)