

# *The RAL Seminar Series*



**NCAR**

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## **The T-REX Valley Wind Model Intercomparison Project: Results and Lessons Learned**

by

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**Foothills Lab Building 2, Auditorium Room 1022  
11:00 a.m.**

The objective of the intercomparison project was to compare the effects of model dynamical cores and physical parameterizations on the simulation of thermally driven slope and valley winds. The setup consisted of an idealized valley-plain topography and an atmosphere initially at rest. The simulations were run with full (dry) physics including a radiation transfer, land surface, and turbulence scheme from sunrise to sunset. Substantial differences in the temporal evolution of the mean up-valley wind are found, including differences in timing and also in the rate of evolution. A new method for the synchronization of the valley flow evolution based on recently developed valley wind theory is presented. After synchronization most models show a very similar initial development of the mean valley wind, but increasing differences in the afternoon. With regard to local structures, such as the valley and slope boundary layers, large differences are found among the models. The main causes leading to different bulk and local flow evolution will be discussed. The talk concludes with practical issues encountered and lessons learned during the model intercomparison project.