# DATA ASSIMILATION IN COUPLED WILDLAND FIRE-ATMOSPHERE MODELING

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## Přednáška v rámci semináře katedry mechaniky ve čtvrtek 15. května 2008 od 10:00 hodin v B 169

This talk will describe a recently developed model which combines simulation of fire spread by the level set method and modeling of the atmosphere by the Weather Research and Forecasting (WRF) code. The data consists of initial and boundary condition and additional data which arrive as the model is running. The state of the model is modified by statistical state estimation, called in geosciences data assimilation. Data assimilation for fire problem presents a challenge because of its highly nonlinear nature. In contrast to the successful application of data assimilation in atmosphere and ocean modeling, where spurious features dissipate, the stochastic variability tends to start spurious fires, which keep growing. We have developed a version of the Ensemble Kalman Filter, called the Morphing EnKF, which uses ideas from image registration and morphing to replace linear combinations by morphs of states. This allows to combine amplitude and position adjustments of the state into one process and prevents spurious fires from developing. These results are joint work with Jonathan Beezley, Janice Coen, and Minjeong Kim.

*Přednáška **v angličtině** se koná ve čtvrtek 15.5.2008 od 10 hodin ve velké zasedací síni děkana (místnost B 169) v budově Stavební fakulty ČVUT v Praze, Thákurova 7, Dejvice. **Všichni zájemci jsou srdečně zváni.***

*Podrobnější informace poskytne Prof. Milan Jirásek, tel. 224 354 481, Milan.Jirasek@fsv.cvut.cz .*