

Geophysical Research Abstracts,
Vol. 10, EGU2008-A-12233, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-12233
EGU General Assembly 2008
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Design of the Kamp flood forecasting model

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This paper presents a distributed model that is in operational use for forecasting flash floods in northern Austria. The main challenge in developing the model was parameter identification which was addressed by a modelling strategy that involved a model structure defined at the model element scale and multi source model identification. The model represents runoff generation on a grid basis and lumped routing in the river reaches. Ensemble Kalman filtering is used to update the model states (grid soil moisture) based on observed runoff. The forecast errors as a function of forecast lead time are evaluated for a number of major events in the 622 km² Kamp catchment and range from 10% to 30% for 4 to 24 hour lead times, respectively.