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Calibration of hydrological models in automated forecasting systems

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Automated systems used for flash flood modelling can contain various models: with different number of independent or dependent parameters, lumped, semi-distributed or distributed, physically based, statistical or conceptual etc. Beside that, temporal and spatial resolution and accuracy of forcing data available in different regions also can be different. In our research, we keen to develop a model calibration methodology which can be efficiently used by default in different conditions including ungauged catchments. This problem is solved through quasi-local parameter optimisation in a physically pre-determined region of N-dimensional parameter space; such a region is automatically indentified by different ways depending on the model type and data uncertainty. Several case studies of successful automatic flash flood modelling performed with the automated forecasting system 'SLS+' are presented.