Geophysical Research Abstracts, Vol. 8, 08540, 2006
SRef-ID: 1607-7962/gra/EGU06-A-08540

Real Time Simulation of the Inflow Discharge for Regulated Reservoirs Using Distributed Hydrological Model with Continuous Soil Moisture Account

M. Mancini(1), J. Martinelli (1), D. Rabuffetti (2), G. Ravazzani (1)
(1) Politecnico di Milano DIIAR-CIMI , (2) ARPA Regione Piemonte

In recent years sophisticated continuous deterministic hydrologic models including complex land surface sub-models have been developed for simulation and forecasting soil water dynamic and river discharge for drought and flood period. In this framework a distributed hydrological model is then presented to simulate continuous inflow discharge into regulated Alpine lakes for an operative real time management system; processes like snow melt, soil water balance, surface and subsurface flow routing are considered. To avoid complex parameterization for soil water balance module, that is often difficult to quantify, especially in presence of dense vegetation, an extension of the well known SCS-CN method for the continuous simulation is developed and discussed. The model has been tested comparing simulation results at hourly time scale with observed inflow data at Maggiore Lake in Italy for a 5 years period (2000-2004). This work is part of the TwoLe-A project, founded by Fondazione Cariplo, for the development of real time management of the water resource of the lake Maggiore.