APPLICATION OF THE DYNAMIC NETWORK MODEL 
FOR A PROBLEM OF SUPPORTING NAVIGATION 
ON THE ODRA RIVER WATERWAY

Key words: dynamic networks, network flows, network optimisation, reservoirs, water resources allocation, water system balance

Summary

This paper presents simulation-optimisation model for the problem of supporting navigation on the Odra River waterway in the period of water shortage. The problem of reservoirs control for flow alimentation on the Odra River waterway was a topic of the Central Research and Development Programme 11.10 “Water Resources Management” realised in 1989/1990. In this problem the structure of transit time in water transhipment through the segments of water system plays a key role in water management. Dynamic network was applied to construct the simulation-optimisation model. In this paper we define basic mathematical terms needed for the construction of the model. General principles of construction of simulation-optimisation network models of surface water resources allocation were formulated. We compared the simulation-optimisation model based on dynamic network with the optimisation model formulated in the framework of the Development Programme 11.10 in 1989/1990.