

A review on the establishment and research in hydrological experimental areas (catchments) in plain areas in China and abroad

Hai Yang, Chuanhai Wang, and Wenjuan Hua

State Key Laboratory of Hydrology-Water Resources and Hydraulic Engineering, Hohai University, Nanjing, China
(yhasan@163.com)

This paper reviewed some specific conceptions of hydrological experimental areas (catchments) while found that the traditional definition of 'catchment' may be difficult to meet in plain areas. According to the review of development history and current situation of hydrological experimental areas (catchments) in plain areas in China, 4 stages were shown besides the recent 10 years, i.e. 'golden stage(1952-1966)', 'backward stage(1966-1986)', 'short recovery stage(1986-1989)' and 'stagnant stage(1986-2006)'. It gets new impetus since 2006 with some investigation work promoted by the government. Furthermore, some historic problems during establishing experimental areas (catchments) in plain areas were revealed based on the document literature and a few meaningful lessons were drawn from the past. It was also the first time to collect and classify the details of both 11 representative experimental areas in China and abroad, after that a brief comparison about the measurement level and research directions was made between two regions. Additionally, we took the experimental research work in the plain of Taihu Lake Basin as example and introduced the particular research goals and the corresponding establishing process, including how to design the experimental area, eg, size, location, land use type, arranging the measurement instruments et al. We hope such case can provide a reference for newly-building, recovering and extending hydrological experimental areas in plain areas in the future. Finally, this paper prospected the future development in establishment and research in hydrological experimental areas (catchments) in plain areas. It may be more common to see the cooperation between model scientists and field experts. Because of the comprehensive goals in water problems, researchers from various fields would work together in the future experimental research work. Scale study and modelling in plain areas will be a promising branch after some typical experimental areas with different land use types are established. Facing such hopeful opportunities, we also made some suggestions.