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Land Subsidence Monitoring and its Countermeasures in the Lower Yangtze Delta Area of China

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The investigation indicates that the land subsidence in the lower Yangtze delta area, China is related to groundwater extraction. Suzhou-Wuxi-Changzhou region (hereinafter in short “Su-Xi-Chang”) belongs to hinterland of lower Yangtze Delta area with total area of 12,000 km2. Since 1960s, with rapid social and economic development, the large scale of groundwater resources were exploited at urban areas, and particularly from 1979 to 2000, the long term excessive pumping of groundwater at Su-Xi-Chang caused rapid decline of groundwater table, and resulted in large scale of land subsidence. This paper introduces the subsidence monitoring system, current status and countermeasures. Based on the 30 year monitoring data of 184 wells, this paper summarizes the groundwater exploitation history and subsidence development, analyzes the relationship between lowering of groundwater table and subsidence. The monitoring data indicate that depression cone of groundwater and subsidence is basically identical in time, space and distribution pattern. Finally, the countermeasures for subsidence are put forward.

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