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Modeling and Simulation for City Flood Inundation on Tracks and Personnel Evacuation	LI Wei - chao, ZHANG Hong - liang, et, al (405)
Gas Station Electrostatic Detecting Methods and Simulation	LIAO Li - juan (409)
Research and Simulation of Soil Conductivity Measurement Methods	ZHU Yong, WANG Zhen - chong, et, al (413)