Method for Assessing Tsunami Damage to Concrete Bridges

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In order to counter the impact of large scale tsunamis, and to understand the damage to railway bridges caused by tsunamis, methods were proposed for diagnosing damage and calculating the effect of fluid force acting on the bridges. In the course of this research, tsunami tests were conducted, providing insight into the fact that in the area close to concrete bridge girders, the water level rose as the flow speed fell, and that there was a difference in water levels between the upper and lower flows around the girders; and then a method was proposed for calculating fluid force acting on girders. The proposed method enables as to calculate fluid forces occurring at the bearing placed between concrete girders and bridge piers, on the basis of the information about the bridge, and the height and speed of the assumed tsunami.