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## Development of three dimensional hydrogeological model in Japanese islands and its applications

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The groundwater resource is a sustainable water resource. Recently, social demands against the groundwater resource become more multifaceted. And almost people need an optimum groundwater management achieved a good balance between conservation and utilization. Recent core technique of groundwater management is quantification of groundwater balance by numerical simulation. It is well known that the behavior of groundwater is restricted by distribution and hydraulic characteristics of a stratum. This argument points to a need for grasping the whole picture on groundwater basins and groundwater storage. And the current situation of groundwater resource development exceeds 1,000m in depth. It is necessary to improvement of advanced information on groundwater including the revaluation of co-existing information. However, basic information on the groundwater has not maintained still enough. Therefore, previous study has not been clarified the whole picture of groundwater basin and groundwater storage throughout Japan. The present work is intended to evaluate the whole picture of groundwater basin throughout Japan, and develop the three dimensional hydrogeological model in Japanese islands using the related database. We developed the three dimensional hydrogeological model based on the geological age as a key to divide from a same viewpoint, and became possible to specify the wide-range continuousness and distribution shape of a stratum which would become an aquifer. This report presents the developed three dimensional hydrogeological model and the estimation results of groundwater storage, unused groundwater resources, hot spring development potential in Japanese islands as its applications.

Keywords: Three dimensional model, Hydrogeology, Database, Japanese islands, Social demands