

AHW026-08

Room:201A

Time:May 27 16:00-16:15

Study on management of groundwater reservoir with example from Ryukyu limestone aquifer in southern part of Okinawa

Jun Yasumoto^{1*}, Takuji Nakano¹, Masahiro Takahashi²

¹University of the Ryukyus, ²NIPPON KOEI CO

The Komesu and Giiza underground dams are first full scale underground dam facilities constructed for irrigation in Japan. A groundwater flow analysis was conducted with three dimensional numerical model (MODFLOW2000) apply for these dam reservoir areas. Through the comparison with calculation and observed data, the cut off wall of dams effectively storage the groundwater in the reservoir areas. This also found the Komesu underground dam can reduce the movement of salt-water into the reservoir areas, salt-water masses remained behind the dam at the time of it is completion.

The observed groundwater level at the reservoir areas were almost reproduced by this model, but there were a few differences between the calculation and observation, response analysis could be carried out to improved the model by inputting various data of geological-structure of Ryukyu limestone and introducing non-darcy flow.

The results of examination make it possible to improve the management of groundwater reservoir in the limestone aquifer area behind the underground dam.

Keywords: underground dam, Ryukyu limestone, numerical simulation, menegement of groundwater