



The potential impact of climate change on water resources and suspended sediment in southern Taiwan

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Recently, climate change impact has been taken into serious consideration gradually. The change of precipitation not only influences water quantity but also quality. This research applied the climate scenario SRES-A2, B2 released by IPCC to analyze the short-term, medium-term and long term influence of river discharge and sediment yield. The records of the discharge ratio between future (short-term, medium-term and long term) and baseline (1961-1990), and the records of the relation (built by Artificial Neural Network, ANN) between discharge and suspended sediment were used to forecast the sediment of the future time period.

Although the results had some variations among various GCMs (such as CGCM2, CCCSR/NIES, ECHAM4, HadCM3 and etc.), the trend appeared that the discharge during wet season will arise, and the discharge during the dry season will decrease in the future in southern Taiwan. From different models, it is indicated that the range of river discharge variation was $\pm 30\sim 40\%$ in the dry season, and $\pm 10\sim 15\%$ in the wet season. Furthermore, the variation of the impact on suspended load was $\pm 30\sim 40\%$ in the dry season, and $\pm 10\sim 20\%$ in the wet season.