



## **Model Development for Cold Spring and Analysis of Hydraulic Head and Temperature Change: A Case Study of Suao Cold Spring**

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There are several benefits for cold spring like developing tourist, health care, and medical efficacy. Because of the profit of cold spring, we need to understand the changes in the temperature and hydraulic head of cold spring to avoid the depletion caused by over-development.

The purpose of study is analyzing the influence of the infiltration and withdrawals to the hydraulic head and temperature of spring. Suao Cold Spring, the only one Taiwanese government monitors and manages to among Taiwanese cold spring, is chose as a case study, and SHEMAT is used for modeling which is needed to set the appropriate hydro-geological parameters, heat parameters, monthly amount of withdrawals and naturally emerging spring, the position of fractures, the boundary and initial conditions, and the valid infiltration simulated by SWAT for simulation. By inputting these parameters, SHEMAT can simulate the monthly change of hydraulic head and temperature.