Another modeling of spouting height time series in hot pond

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   Physical parameters which control time series pattern of spouting height are discussed.
   Irregular spouting height and period are observed at active vents in Oyunuma pond, Goshogake geothermal area on the east of Akita-Yakeyama volcano, northeastern Japan.
   In order to explain the irregular pattern of the spouting height and period, a simple master-slave model is presented. One lidded pot with boiling water is as a master pot. A smaller volume pot as a slave with inner temperature at 100 degree is connected with the master pot. Steam is supplied through a connected hole from the master pot to the slave pot. Steam pressure of boiling drives the lid against atmosphere pressure and gravity. Simultaneous nonlinear differential equations are described and are solved for lid height and inner pressure of both pots. Relation of flux and pressure is referred Ida (1996). The mass and the radius of the lid, the inner steam volume is fixed for the master pot. The slave pot is assumed that the radius of the lid is the same as the master and the inner steam volume is smaller than that of the master. Numerical solutions are obtained for various mass of the lid of the slave pot under assumption of constant steam supply. The solution represents that the mass of the lid of the slave pot controls height and period of the lids of the master and the slave pot. It is notable that irregular motion of the lids emerges in a certain range of mass of the slave pot. Such time series patterns about heights and period of lid motion are successfully simulated the features of actual spouting in hot ponds.