Variational-Lagrangian Analysis of Aquifers with Application to Artesian Wells.

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Abstract. A unifying variational principle of virtual dissipation of wide interdisciplinary generality is discussed in the more restricted context of aquifer analysis. It is applied to artesian well problems, one with constant drawdown, the other with constant pumping rate for both small and large well capacity. Numerical agreement with known result is excellent. Drawdown is also derived for ranges of values not covered by standard results. The computational work is simple and performed on a hand computer.