Alternative Interpretation of the Pressure Front Displacement Pulse for Pumping Tests in Confined Aquifers

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Abstract

Chesnaux (2018) distinguished between the pressure front displacement pulse and the groundwater displacement during a pumping test in a confined aquifer. The physical interpretation of the expression that Chesnaux (2018) adopted for the radial distance traveled by the pressure front is explored. It is shown that the expression adopted by Chesnaux (2018) is an implicit statement regarding the magnitude of the head change caused by pumping. The statement is consistent with the integrated effect of a continuous sequence of pulses. Alternative expressions for the migration of the pressure front and celerity are derived that are consistent with the conception of the migration of a pulse.

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