

Numerical study of passive and active earth pressures of sands

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Abstract

The passive and active earth pressures, acting against a vertical retaining wall are often a function of many parameters. In this paper, series of two dimensional finite difference analyses have been carried out with the Fast Lagrangian Analysis of Continua code (FLAC), to estimate the passive and active earth pressure coefficients, for various mechanical and geometrical configurations of backfill retained by a vertical rigid wall. The effect of backfill inclination, soil-wall interface friction angle and proximity of a slope are investigated. The results of the present study are compared with those available in the literature. The analyses show that the distance between the wall and the crest of the slope influence considerably the earth pressures coefficients.

Keywords : Vertical retaining wall; Interface; Earth pressure; Sloping backfill; Numerical modelling.

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