FINITE ELEMENT ANALYSIS OF CONCRETE GRAVITY DAM ON STRATIFIED FOUNDATIONS

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Abstract

Concrete Gravity Dam is a solid concrete structure with its cross-section approximately triangular in shape, so proportioned that the external forces exerted on it are resisted by its own weight. The pattern of stress distribution and deformations in the dam foundation system are of great concern for safety and economy case of a high gravity dam founded on stratified weak rock. Any variation in foundation properties would largely affect the safe design of dam. The objectives of the present study are to analyze stresses and deformations in dam foundation system due to applied loads. Stresses and deformations in the dam foundation section under different conditions have been worked out by using 2-Dimensional Finite Element Method.

Keywords *: concrete gravity dam, stresses, deformations, finite element method*