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### Slope Stability Analysis of Kattery Watershed in Nilgiris District

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**Abstract :** The slope stability analysis is always under severe threats in many parts of nilgiris district, causing disruption, loss of human life and economy. The stability of slopes depends on the soil shear strength parameters such as Cohesion, Angle of internal friction, Unit weight of soil and Slope geometry. The stability of a slope is measured by its factor of safety using geometric and shear strength parameter based on infinite slopes. In this research, investigation was carried out at 5 locations in Kattery watershed in nilgiris district. The factor of safety of the slope determined by Mohr Coulomb theory based on shear strength parameter calculated from direct shear test which is a conventional procedure for this study. Artificial.

Neural Network (ANN) Model is used to predict the factor of safety. The input parameters for the (ANN) are chosen as Cohesion, Angle of internal friction, Density and Slope angle and the factor of safety as output. The results obtained in ANN method were compared with that of conventional method and observed a good agreement between these two methods.

**Key words :** Slope stability analysis, Kattery watershed, Nilgiris district, Factor of safety, ANN Modelling.

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