**ANALYSIS OF TRANSMISSION TOWERS FOR OPTIMAL**

**BRACING CONFIGURATION**

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ABSTRACT:

Transmission line towers are designed to meet the increasing demand for electrical energy. In this paper, a self-supporting transmission line tower with three different types of bracings patterns (W, Y, and XB) is analyzed to obtain an optimal bracing configuration. The transmission tower is modelled and analyzed as a three-dimensional structure in STAAD.ProV8i. The bracing system is the vital component in transmission line towers which provides lateral load resistance in steel towers. The base width of the tower is taken as one-sixth of the total height of the tower. All the towers considered in this work are of constant height and base width but of different types of bracing configurations. The tower configuration has been determined by taking into account of all structural and electrical requirements of a tower. The sag, tension for both conductor and ground wire and the wind load at each panel are evaluated. The various loads acting on the tower such as transverse loads, vertical loads, longitudinal loads and panel loads for various bracing configurations are calculated. The various parameters such as axial forces in the members, joint displacements, total weight of steel required are evaluated and an optimal bracing configuration has been suggested.

**KEYWORDS:** Transmission tower, Transverse loads, Vertical loads, Longitudinal loads, Panel loads and Bracing configurations

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