

## **Stability Problem of Stadium Roof**

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The contribution deals with stability of existing stadium roof. The roof has in the plan view elliptical shape. The height of the roof is variable and is optimally designed according to minimum potential energy. The objective of the paper is the ultimate bearing capacity of the roof loaded with dead loads and wind loads. The investigation of the problem was carried out as a static analysis with large deformations. Only the amount of wind load was increased during the analysis. As an iteration procedure which is capable to handle bending and stability phenomena, the arc-length method was chosen. The solution was stopped by snap-through.

**Keywords:** Stability, Snap-through, Arc-length method, Large deformation