

Title:

Masts and Mast-supported Structures

Organizers:

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Abstract:

The session highlights the evolution and current practices in the analysis and design of masts and masted structures.

Masts in tensioned membrane structures are the main compression members that provide equilibrium to the high tension forces from fabric membrane and cables. The variation in mast types and their designs have evolved from simple topological arrangements to an assembly of mast modules depending on the structural type and scale. The stiffness of tall and slender masts needs to be substantial to overcome instability. Recent advances have included prestressed cable-stayed masts that offer the requisite stiffness through prestress, are lightweight, and structurally expressive. The session will feature case-studies, modeling and analysis, stability behavior, and structural design of masts and masted structures.