[S6-1] Conceptual Structure Design for Korean Extremely Large Telescope (KELT)

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We report the progress for a conceptual structure design for the Korean Extremely Large Telescope of 30m in aperture. The primary mirror support system uses the "whiffle-tree" method and the raft structure. The tripod support was applied for the upper tube and the wheel and counterweight methods for the lower tube. The altitude-azimuth mounting utilizes eight hydrostatic bearings. The structural performance both at the element and system levels were simulated. The simulation details and initial results are compared with the other extremely large telescope structure including CELT and GSMT.

[S6-2] A Novel Optical Design of Korean Extremely Large Telescope (KELT)

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We present a novel optical solution for the Korean Extremely Large Telescope of 30m in aperture. The report begins with the brief summary of the KELT science objectives derived from other 30 -100m class ground based telescope projects. These objectives were used to define the telescope's optical requirements. The optical performances for the telescope optical system were then simulated and optimized using a popular optics design package as well as the theoretical estimation under the first order approximation. The simulation results were then compared with the other extremely large telescope design including OWL and EURO50. The computational details together with the scientific implications are presented.