

Line tension of tower yarder system equipped with intermediate supports: theoretical examination of skyline tension and intermediate support load

Yasushi Suzuki, Hiroaki Nishimori, Jun'ichi Gotou (Faculty of Agriculture, Kochi University), Ahmad Hidayat Setiawan (Graduate School of Integrated Arts and Sciences, Kochi University) and Toshihiko Yamasaki (Kochi Prefectural Forestry Technology Research Center)

We measured skyline tension and load on an intermediate support of a European tower yarder system which has been recently introduced to logging operations in mountainous forests in Japan. The tension was monitored at the end of tail spar and the load on a intermediate support nearest to the tail spar. We estimated line tensions at each support point through the monitored line tension and verified the result via the monitored intermediate support load. Tension of the main line, which pulls hocked logs from stump to a carriage, was not monitored; however we also estimated the main line tension through the skyline tension and the intermediate support load. In this oral presentation, we explain the estimation method and provide some discussions on operation safety during lateral logging.

Keywords: intermediate support, line tension, skyline, theoretical examination, tower yarder