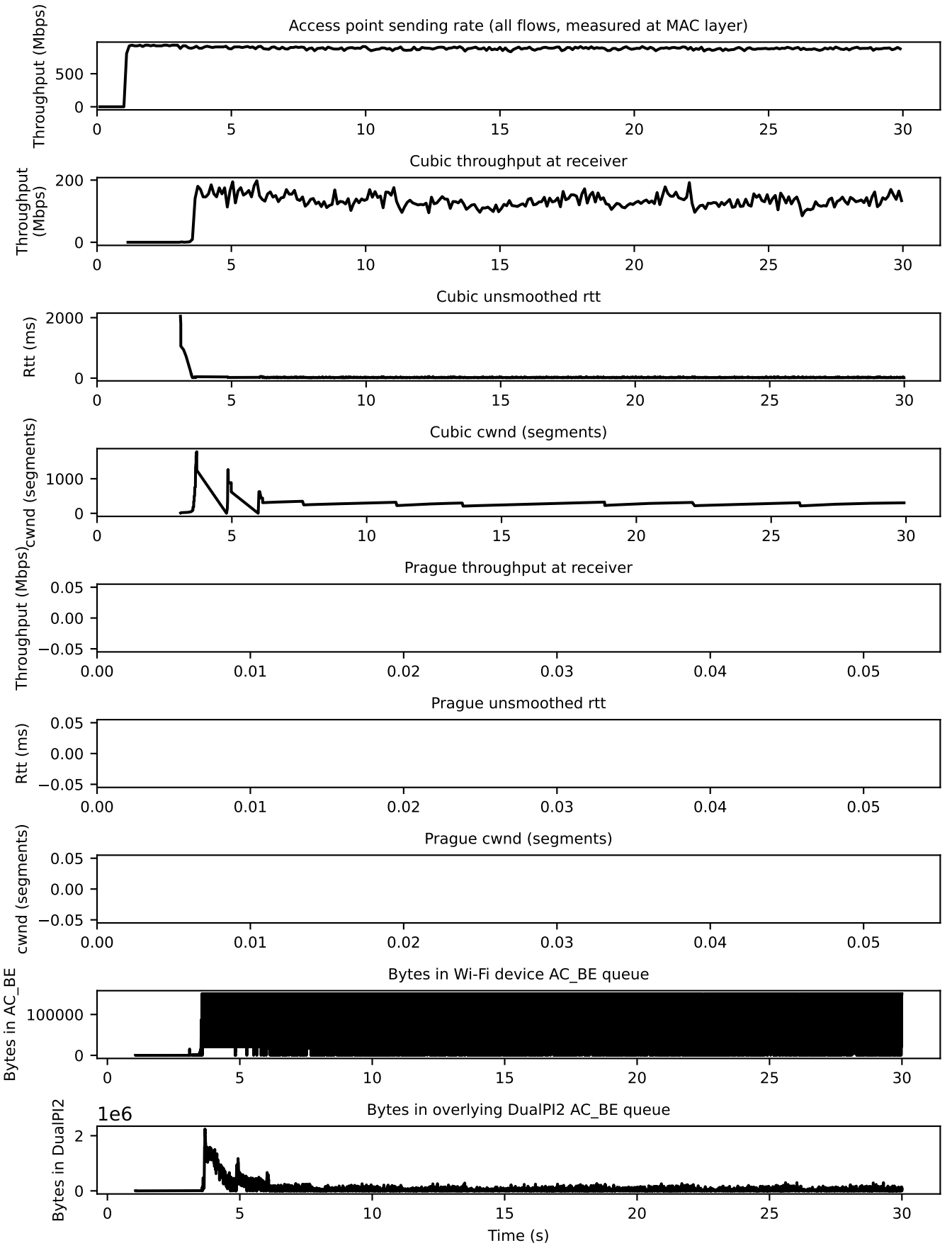Simulation ED4-MS2-AP1-LS3-TC1-TS2