This book trains engineers and students in the practical application of machining dynamics, with a particular focus on milling. The book walks readers through the steps required to improve machining productivity through chatter avoidance and reduced surface location error, and covers in detail topics such as modal analysis (including experimental methods) to obtain the tool point frequency response function, descriptions of turning and milling, force modeling, time domain simulation, stability lobe diagram algorithms, surface location error calculation for milling, beam theory, and more.