

## **Abstract**

Idle and in charge power equations of a shaker with rotating eccentric -weight and of a slider crank type one were set up and compared. A tree structure model was built of truck and main roots. Using its static equations the location of virtual turning centre versus shaking height function was defined. Based on this function a simple three element model composed of reduced mass, spring constant and kinetic damping coefficient was transferred from a trunk cross-section to all others. Replacing these reduced parameters into the efficient power equation of the two types of shaker and into the equation of trunk amplitude the efficient power consumption and amplitude versus shaking height curves were drawn. These functions, with the free combination of eccentricity, shaking frequency and mass parameters of the shakers help to optimize machine design. Calculating the relation efficient power consumption/trunk amplitude for all trunk cross sections the most efficient clamping heights of the shakers were found.