

Abstract

A technology capable of reducing a data amount required for a estimation processing while maintaining accuracy for estimation of a virtual deformation state of an attachment which receives external force in a crane is provided. A deformation state of each of a boom (first attachment element) and a jib (second attachment element) configuring an attachment connected to a crane main body so as to perform a derricking motion is estimated according to a crane model. The crane model is a model indicating a correlation among an "acting force factor" for specifying an acting state of force on the attachment connected to the crane main body so as to perform the derricking motion, a "posture factor" for specifying respective postures of the boom and the jib, and "angle changes (elevation angle deviations $\Delta\theta_1$ and $\Delta\theta_2$) " indicating respective deformation states of the boom and the jib.