

Effect of ship tilting and motion on liquid re-distributor in CO₂ amine absorber

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The objective of this study is to present design guidelines for a liquid redistributor (or second distributor) in a CO₂ amine absorber subjected to ship motion (rolling motion) by the ocean wave. An Eulerian CFD (computational fluid dynamics) model was used to investigate hydrodynamics of gas-liquid multiphase flow in the liquid redistributor in a real scale (2.4 m in diameter). The mal-distribution factor was compared for three cases of vertical standing, static tilting and rolling motion. It was found that the effect of the static tilting on the liquid holdup was more severe than that of the rolling motion.