Wave refraction simulation from AIRSAR and POLSAR C-band data

Abstract

This work utilizes radar airborne data to simulate coastal wave refraction pattern. Two radar airborne data of AIRSAR and POLSAR with Cvv-band are involved. The quasi-linear model used to retrieve the significant wave height from radar airborne data. Then, wave transformation model based on first order Partial Differential Equation (PDEs) used to simulate wave refraction pattern. The study shows the convergence spectra refraction energy is 0.84 m² sec is higher than divergence refraction energy. In conclusion, the integration between quasi-linear model and (PDEs) of wave spectra transform can be used as good tool to simulate coastal wave refraction pattern from AIRSAR and POLSAR Cvv-band data.