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## Modeling of ocean wave propagation across the crevasse-ridden ice shelf: focus on the comparison of two models

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The propagation of high-frequency elastic-flexural waves through an ice shelf was modeled by a full 3-D elastic models. These models based on the momentum equations that were written as the differential equations (model#1) and as the integro-differential equations (model#2). The integro-differential form implies the vertical integration of the momentum equations from the ice surface to the current coordinate  $z$  like, for instance, in the Blatter-Pattyn ice flow model. The sea water flow under the ice shelf is described by the wave equation. The numerical solutions were obtained by a finite-difference method. Numerical experiments were undertaken for a crevasse-ridden ice shelf with different spatial periodicities of the crevasses. In this research the modeled positions of the band gaps in the dispersion spectra dependently on the spatial periodicities of the crevasses is investigated from the point of view of agreement of these positions with the Bragg's law. The investigation of the dispersion spectra shows that different models reveal different sensitivities of the dispersion spectra (in relation to the appearance of the band gaps in the spectra) dependently on the spatial periodicity of the crevasses and on the crevasses depth.