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## Water-waves on linear shear currents. A comparison of experimental and numerical results.

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Propagation of water waves can be described for uniformly sheared current conditions. Indeed, some mathematical simplifications remain applicable in the study of waves whether there is no current or a linearly sheared current. However, the widespread use of mathematical wave theories including shear has rarely been backed by experimental studies of such flows.

New experimental and numerical methods were both recently developed to study wave current interactions for constant vorticity. On one hand, the numerical code can simulate, in two dimensions, arbitrary non-linear waves. On the other hand, the experimental methods can be used to generate waves with various shear conditions.

Taking advantage of the simplicity of the experimental protocol and versatility of the numerical code, comparisons between experimental and numerical data are discussed and compared with linear theory for validation of the methods.

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