



Variational theory for 2-dimensional free surface flow: Why are G.L. Liu's variational principles incorrect?

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Interests in variational theory of the problem discussed have grown rapidly in recent years, various variational formulae have appeared in literature. But some of the variational principles are wrong. The paper illustrates how to establish variational principles by the semi-inverse method step by step. Comparison with Liu's results reveals that the present technique is much more convenient and reliable. Liu's variational formulation is based on technical, theoretical and conceptual errors, including misrepresentations of the semi-inverse method.

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