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On connection between variationality of a six-order ordinary differential equation and Hamilton-Ostrogradskii equations. (English) [Zbl 1506.47085](#)

Lobachevskii J. Math. 42, No. 15, 3594-3605 (2021).

Summary: In the paper, we investigate the representability of a six-order ordinary differential equation in the form of Hamilton-Ostrogradskii equations. For this purpose, potentiality conditions are obtained and the corresponding Hamilton-Ostrogradskii action is constructed.

MSC:

[47G40](#) Potential operators

[70H05](#) Hamilton's equations

[34A55](#) Inverse problems involving ordinary differential equations

Keywords:

potential operator; direct variational formulation; variational principle; Hamilton-Ostrogradskii equations

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