

**Garaev, K. G.**

**Remark to the main problem of calculus of variations.** (English) [Zbl 1479.49006](#)  
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A new sufficient condition is obtained for the existence of a weak minimum of a functional that arises in the calculus of variations. In contrast to the classical approach, the Jacobi equation doesn't need to be integrated, which is more convenient than the Jacobi method.

Reviewer: [Bülent Karasözen \(Ankara\)](#)

**MSC:**

[49J20](#) Existence theories for optimal control problems involving partial differential equations

**Keywords:**

[main variational problem](#); [Euler problem](#); [reinforced Legendre condition](#); [Jacobi equation](#); [Steklov inequality](#); [sufficient condition of extremum](#)

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**References:**

- [1] Gelfand, I. M.; Fomin, S. V., *Calculus of Variations* (1961), Moscow: Fizmatlit, Moscow · [Zbl 0127.05402](#)
- [2] Kantorovich, L. V.; Krylov, V. I., *Approximate Methods of Higher Analysis* (1962), Moscow: Fizmatlit, Moscow · [Zbl 0083.35301](#)
- [3] Ya. B. Zeldovich and A. D. Myshkis, *Elements of Applied Mathematics* (Nauka, Fizmatlit, Moscow, 1972), pp. 420-421 [in Russian].
- [4] Akhiezer, N. I., *Lectures in Calculus of Variations* (1955), Moscow: GITTL, Moscow
- [5] Gyunter, N. M., *Course in Calculus of Variations* (1941), Leningrad: Gostekhizdat, Leningrad

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