

Criteria for the existence of a potential well

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SUMMARY

We consider a critical point u_0 of a functional $f \in C^1(H, \mathbb{R})$, where H is a real Hilbert space, and formulate criteria ensuring that u_0 lies in a potential well of f without supposing that the gradient of f is Fréchet differentiable at u_0 . Examples of integral functional defined on Sobolev spaces show that the conditions are sometimes sharp.

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