Asymptotic distribution of critical values

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Abstract. Let X be a closed manifold and $f : X \times X \to \mathbb{R}$ be a smooth function. Define $f_n : X^{n+1} \to \mathbb{R}$ by $f_n(x_1, \cdots, x_{n+1}) := \sum f(x_i, x_{i+1})/n$. We study the asymptotic distribution of the critical values of f_n as n goes to infinity. This is the joint work with Tomohiro Fukaya.