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Filtering the Heegaard Floer contact invariant.

We define an invariant of contact structures in dimension 3 from Heegaard Floer homology. This invariant takes values in $\mathbb{Z}_{\geq 0} \cup \{\infty\}$. It is zero for overtwisted contact structures, ∞ for Stein fillable contact structures, non-decreasing under Legendrian surgery, and computable from any supporting open book decomposition. It gives a criterion for tightness of a contact structure stronger than that given by the contact invariant in Heegaard Floer homology, and an obstruction to existence of Stein cobordisms between contact 3-manifolds. We also use our invariant to give a somewhat simpler criterion for tightness, and exhibit examples with vanishing contact invariant in Heegaard Floer homology for which our invariant is finite and non-zero. (Received September 11, 2016)