On subcritically Stein fillable 5-manifolds
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Abstract. We make some elementary observations concerning subcritically Stein fillable contact structures on 5-manifolds. Specifically, we determine the diffeomorphism type of such contact manifolds in the case the fundamental group is finite cyclic, and we show that on the 5-sphere the standard contact structure is the unique subcritically fillable one. More generally, it is shown that subcritically fillable contact structures on simply connected 5-manifolds are determined by their underlying almost contact structure. Along the way, we discuss the homotopy classification of almost contact structures.