

**Brooks, Robert**

**On branched coverings of 3-manifolds which fiber over the circle.** (English) Zbl 0565.57006  
*J. Reine Angew. Math.* 362, 87-101 (1985).

We show that any 3-manifold has a branched double covering which is hyperbolic and fibers over the circle. The genus of the fiber can be taken to be  $\max(2, H(M))$ , where  $H(M)$  is the Heegaard genus of  $M$ .

**MSC:**

[57M12](#) Low-dimensional topology of special (e.g., branched) coverings  
[57N10](#) Topology of general 3-manifolds (MSC2010)

Cited in **3** Reviews  
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**Keywords:**

[hyperbolic 3-manifold](#); [fibre bundles over the circle](#); [branched double covering](#); [Heegaard genus](#)

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