

I would like to communicate the proof of a fibering theorem for compact 3-manifolds, which is a contribution towards a conjecture of Peter Scott. Without a doubt, most of us are familiar with *Stallings' Fibration Theorem*, which, in brief, tells us that a compact, irreducible 3-manifold  $M$  whose fundamental group  $G$  contains a finitely generated normal subgroup  $N$  not of order 2, with an infinite cyclic quotient  $G/N$ , necessarily fibers over  $\mathbb{S}$ . The fiber is a surface  $F$  whose fundamental group is isomorphic to  $N$ . Stallings' Fibration Theorem is the best possible converse to the observation that if  $M$  is a surface bundle over the circle, one has  $1 \rightarrow \pi_1(F) \rightarrow \pi_1(M) \rightarrow \mathbb{Z} \rightarrow 1$ . This short exact sequence is just a part of the long exact sequence of homotopy groups of a fibration - here we need only assume connectedness of the fiber. Interesting results have been proven when one relaxes the various assumptions on the structure of the group  $G$ . For example, we have the theorems of Hempel and Jaco from 1972, as well as results by Elkalla (1983), and Moon (2005). My interest in this vein of research has been restricted to the case when  $N$  is subnormal and not necessarily finitely generated but only contained in a finitely generated subgroup  $U$ . Unlike Stallings, we do not require that  $G/N$  be infinite cyclic, but we still have an infinite "quotient" assumption by requiring that  $U$  be of infinite index in  $G$ . My work is an extension of Moon's results from 2005 and finishes where he left off prior to the proof of the Geometrization Conjecture by Perelman.

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