ISSN 1472-2739 (on-line) 1472-2747 (printed)

Algebraic & Geometric Topology
Provisional Erratum
Published: 12 August 2004

Erratum to 'K-theory of virtually poly-surface groups'

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Abstract In this note, we point out an error in the above paper. We also refer to some papers where this error is corrected partially and describe a positive approach to correct it completely.

AMS Classification 57N37, 19J10; 19D35

Keywords Strongly poly-surface group, fibered isomorphism conjecture, 3-manifold groups, pseudoisotopy functor

In this note 'FIC' stands for the Fibered Isomorphism Conjecture of Farrell and Jones corresponding to the pseudoisotopy functor (see [1]).

In the proof of the main lemma of [3] we found some filtration of the surface $\tilde{F}$ which is preserved by the diffeomorphism f and used this filtration to find a filtration of the mapping torus M_f of f by compact submanifolds with incompressible tori boundary. Recall that $\tilde{F}$ was the covering of the surface F corresponding to the commutator subgroup of $\pi_1(F)$ and $f : \tilde{F} \to \tilde{F}$ was a lift of a diffeomorphism $g : F \to F$. Also recall that the main lemma of [3] says that the FIC is true for $\pi_1(M)$ where M is the mapping torus of a diffeomorphism of F. The proof of the existence of the above filtration of M_f, we sketched in [3] is incorrect. In the proof of the main lemma of [4] we show that some regular finite sheeted cover of M_f admits a filtration of the required type provided g satisfies certain conditions. We called diffeomorphisms satisfying these conditions *special* ([4], section 1, definition). In fact if the diffeomorphism g is not special then in general such a filtration of a finite sheeted covering of M_f may not exists. Thus if we assume that g is special then a complete proof of the main lemma of [3] is given in [4]. For general g we prove the main lemma of [3] in [5] assuming that the FIC is true for B-groups. By definition a B-group contains a finite index subgroup isomorphic to the fundamental group of a compact irreducible 3-manifold with nonempty incompressible boundary so that each boundary component is a surface of genus ≥ 2.

We have also proved in theorems 3.3 and 3.4 of [5] that the FIC is true for a large class of B-groups. Here we mention that the surjective part of the FIC for torsion free A-groups (see definition 3.1 of [5]) is already proved by L.E. Jones in [2] and we have proved in proposition 9.3 of [5] that every B-group is an A-group. For clarity we recall that an A-group contains a finite index subgroup isomorphic to the fundamental group of a complete nonpositively curved A-regular Riemannian manifold.

Also we should point out that in this situation the proof of proposition 2.3 of [3] needs a slightly elaborate argument. We give this proof in proposition 1.7 of [4]. Recall that proposition 2.3 says that the FIC is true for the fundamental group of a 3-manifold which has a finite sheeted cover fibering over the circle.

Finally we record that at the time of writing this note, the main lemma of [3] remains unproven in general and therefore the proof of any result where the main lemma is used, for general monodromy, should be given an alternate argument. Also the proof of the main lemma given in [3] is withdrawn.

References

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