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Erratum to: A new proof of the odd primary homotopy exponent of spheres

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I am grateful to Bill Richter for pointing out an error in [3], which was later used in [4] as one step of many in a new proof of the odd primary homotopy exponents of spheres.

The statement in question is as follows. Let p be a prime and localize spaces and maps at p . Let $E^2: S^{2n-1} \rightarrow \Omega^2 S^{2n+1}$ be the double suspension, and let W_n be its homotopy fibre. Gray [1] constructed a classifying space BW_n for W_n , a homotopy fibration $S^{2n-1} \xrightarrow{E^2} \Omega^2 S^{2n+1} \rightarrow BW_n$ and a homotopy fibration $BW_n \rightarrow \Omega^2 S^{2np+1} \xrightarrow{\phi} S^{2np-1}$. Gray went on to conjecture that the composite $\Omega^2 S^{2np+1} \xrightarrow{\phi} S^{2np-1} \xrightarrow{E^2} \Omega^2 S^{2np+1}$ is homotopic to the p th-power map.

In [3, Theorem 1.1] a proof was given that Gray's conjecture holds for primes $p \geq 3$. However, this made critical use of [3, Lemma 2.3], which Gray and Richter later identified as being incorrect without additional assumptions. It may be possible that these additional assumptions can be shown to hold for the specific application of [3, Lemma 2.3] used in the argument of [3, Theorem 1.1], but this is unclear. Instead, Richter [2] uses different methods to give a proof of Gray's conjecture which holds for all primes p .

In terms of [4], the statement that the composite $\Omega^2 S^{2np+1} \xrightarrow{\phi} S^{2np-1} \xrightarrow{E^2} \Omega^2 S^{2n+1}$ is homotopic to the p th-power map for p odd is used to prove [4, Lemma 6.3]. So if the citation to [3] for a proof of this statement is changed to a citation to [2], the argument in [4] goes through without change.

The Online version of the original article can be found under
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