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On the Classification of 3-stage Postnikov Towers

Moore Postnikov factorization allows us to view homotopy types of topological spaces as being constructed out of standardized building blocks, i.e., Eilenberg–MacLane spaces.

The relevant classification result has long been known for 2-stage spaces, i.e., those constructed from just two building blocks. The 3-stage case is in general unresolved.

We investigate the latter question in situations where the factorization—viewed as a fibration—has an H -cogroup base space and a product of Eilenberg–MacLane space fibres. A precise classification result up to fibrewise homotopy type is obtained for such cases.

This result appears to generalize to higher-dimensional cases in a relatively straightforward manner.