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Homotopy groups of some mapping telescopes.

Algebraic topology and algebraic K-theory (Princeton, N.J., 1983), 126–151, *Ann. of Math. Stud.*, 113, *Princeton Univ. Press*, *Princeton*, *NJ*, 1987.

Let P_b^t be the Thom spectrum of the bundle $b\xi$ over $\mathbf{R}\mathrm{P}^{t-b}$; the notation is intended to suggest $\mathbf{R}\mathrm{P}^t/\mathbf{R}\mathrm{P}^{b-1}$, but b may be negative. Assume t is even or ∞. Then the authors being by proving the existence of suitable maps $P_b^t \overset{l_{b,t}}{\to} P_{b-8}^{t-8}$ (inducing isomorphisms in K_* and K^*, and of Adams filtration 4). They define $\overline{P}_b^t$ to be the mapping-telescope or homotopy-limit of the sequence $P_b^t \overset{l_{b,t}}{\to} P_{b-8}^{t-8} \overset{l_{b-8,t-8}}{\to} P_{b-16}^{t-16} \to \cdots$. They determine the homotopy groups of $\overline{P}_b^t$ by proving that the Hurewicz homomorphism $\pi_*(\overline{P}_b^t) \to J_*(\overline{P}_b^t)$ is an isomorphism, and calculating $J_*(\overline{P}_b^t)$. The method uses bo-resolutions [see Mahowald, Pacific J. Math. **92** (1981), no. 2, 365–383; MR0618072; the authors and S. Gitler, Trans. Amer. Math. Soc. **268** (1981), no. 1, 39–61; MR0628445; correction; MR0716854].

The main application is to the theory of K_*-localisations [A. K. Bousfield, Topology **18** (1979), no. 4, 257–281; MR0551009]. The telescope $\overline{P}_b^t$ is the K_*-localisation of P_b^t, and the authors can also identify the K_*-localisations of the Moore spectra for the groups $\mathbf{Z}/2^m$ and $\mathbf{Z}/2^\infty$. A final section has an application to Brown-Comenetz duality.

{For the collection containing this paper see MR0921470}

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