

ABSTRACT. In this paper we compute the 3-primary v_1 -periodic homotopy groups of the exceptional Lie group E_7 . This represents the next stage in the author's goal of calculating the v_1 -periodic homotopy groups of all compact simple Lie groups (at least when localized at an odd prime). Most of the work goes into calculating the unstable Novikov spectral sequence of $\Omega E_7/Sp(2)$. Showing that this spectral sequence converges to the v_1 -periodic homotopy groups in this case utilizes recent results of Bousfield and Bendersky-Thompson.