Some new families of filtration six in the stable homotopy of spheres

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This paper proves the existence of new nontrivial family of filtration six in the stable homotopy groups of spheres $\pi_{t-6}S$ which is represented by $h_0 g_0 \gamma_3 \in Ext_A^{6,*}(Z_p, Z_p)$ in the Adams spectral sequence , where $t = (p^n + 3p^2 + 3p + 3)(p-1)$.

The existence of the above filtration six family relies on the existence of the homotopy elements in the homotopy groups of the Smith-Toda spectrum $V(1)$ which is represented by $h_0 g_0 \in Ext_A^{3,k}(H^*(V(1)), Z_p)$ in the Adams spectral sequence and it is proved by some pull back argument processing in the Adams resolution of some spectra related to $V(1)$ and the sphere spectrum S.