962-55-1133 **Inga A. Johnson*** (`johnson@noether.uoregon.edu`), Department of Mathematics, University of Oregon, Eugene, OR 97403. *Real Stunted Projective Spaces and the Root Invariant.*

Toda has shown that the map $2^{\epsilon(n,k)}$ on $\Sigma^\infty\mathbb{RP}^{2n}_{2k-1}$ is homotopic to the constant map. Study of the Root Invariant and the EHP spectral sequence requires understanding the effect of $2^{\epsilon(n,k)-1}$ on $\Sigma^\infty\mathbb{RP}^{2n}_{2k-1}$. We calculate the effect of this map, (actually an approximation for $n-k$ large), and use this to estimate $\mathrm{R}(2^w x)$ in terms of $\mathrm{R}(x)$. An example of my results follows.

Theorem: For $x : S^{r-1} \to S^{-1}$, $f \in \mathrm{R}(x)$, and $w = 4k$, there are two cases. If $|\mathrm{R}(x)| - |x| \equiv 1 \bmod 2$, then $\langle f, \cdot 2, \alpha_{4k}\rangle \cap \mathrm{R}(2^{4k}x) \neq \emptyset$, or $\mathrm{R}(2^{4k}x)$ is in a higher dimension than $\langle f, \cdot 2, \alpha_{4k}\rangle$. If $|\mathrm{R}(x)| - |x| \equiv 0 \bmod 2$, then $\alpha_{4k} \circ f \in \mathrm{R}(2^{4k}x)$, or $\mathrm{R}(2^{4k}x)$ is in a higher dimension than $\alpha_{4k} \circ f$.

Here α_{4k} is the element of order 2 in the image of J in dimension $4k-1$, and $\langle f, \cdot 2, \alpha_{4k}\rangle$ is the Toda bracket. (Received October 02, 2000)