Add up the maps

$$\bigvee \eta_k : \bigvee S^{2nk+1} \longrightarrow \Sigma \Omega S^{2n+1}$$

to get a homology isom.

Step 4. Define the Hopf maps as follows:

Extend $\overline{h} : S^{2n} \cup \cdots \cup e^{2np} \longrightarrow S^{2np} \xrightarrow{\Sigma} \Omega S^{2np+1}$

to $h : \Omega S^{2n+1} \longrightarrow \Omega S^{2np+1}$ and note that we have an isomorphism

$$h : H_{2pn}(\Omega S^{2n+1}) \xrightarrow{\cong} H_{2pn}(\Omega S^{2pn+1}).$$

Claim: When we use $\mathbb{Z}_{(p)}$ coefficients, this forces the Hopf map to induce an epimorphism of coalgebras.

The claim follows from the following cohomology statements: Recall that $H^*(\Omega S^{2n+1}) = \Gamma(x)$, $H^*(\Omega S^{2pn+1}) = \Gamma(y)$, $|x| = 2n$, $|y| = 2pn$.