

Squaring loop

$\cos \beta$ $\xrightarrow{\text{squaring \& BPF}}$ $\cos 2\beta$

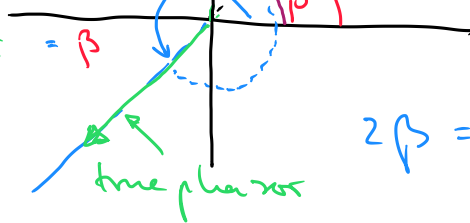
Exp: $\beta = \frac{5}{4}\pi$

\leftarrow squared (and bandpass filtered) phasor (BPF)

divide by 2

$2\beta \bmod 2\pi$

$$\hat{\beta} + \pi = \frac{5}{4}\pi = \beta$$



$$2\beta = \frac{5}{2}\pi$$

$$2\beta \bmod 2\pi = \frac{\pi}{2}$$

\wedge divide by 2

$$\Rightarrow \beta = \frac{\pi}{4} = \beta + \pi$$