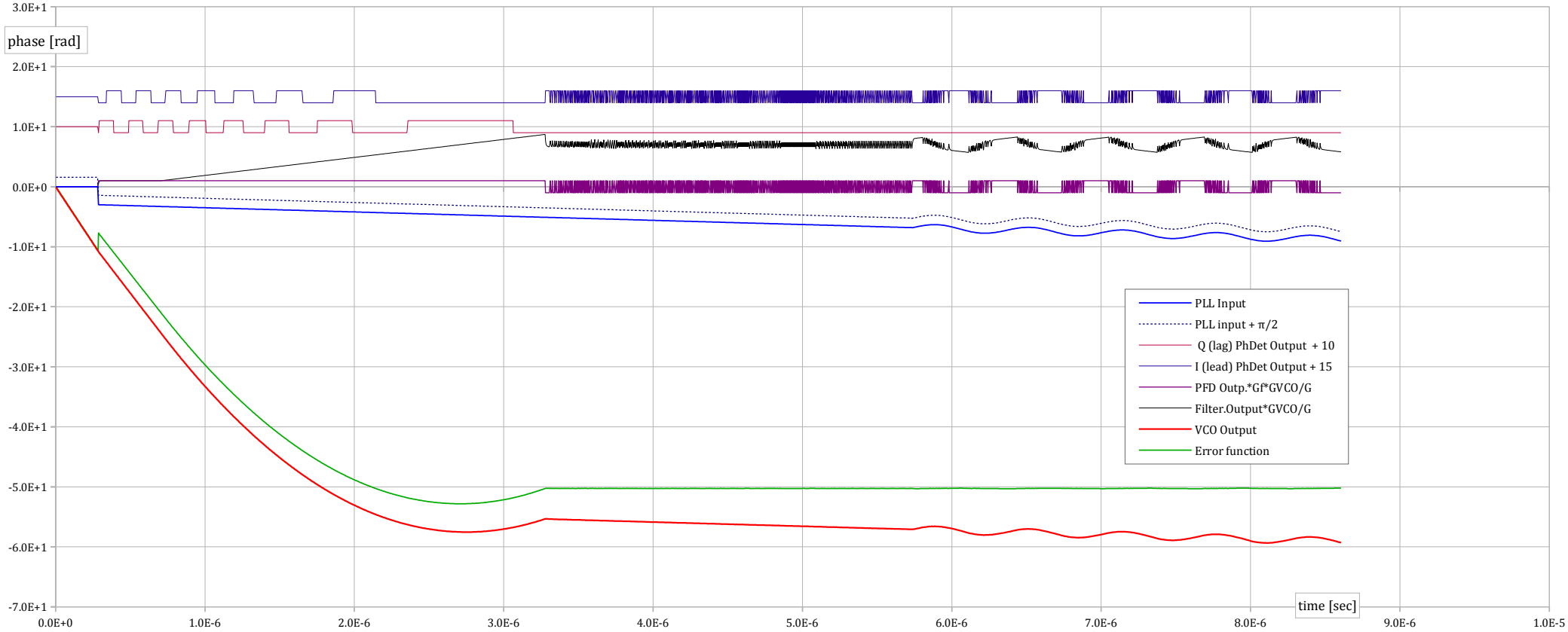
Acquisition transient of the 2nd order type 2 PLL

3000 discrete time points, bang-bang PFD



ω_p [rad/sec] = **6.28E+008**
ω_{n2} = 3.98E+006
ζ = 0.6633

ω_p - ω_{fr} [ppm] = **60000**
τ_z = 3.33E-007
G = 5.28E+006

(ω_{max} - ω_{min})/2 [ppm] = 6.00E+005
ω_z = 3.00E+006
τ_1 = 1.89E-007

τ_1 = 1 / G
ω_{n2}2 = G / τ_z

one time step = min(τ;τ_z) / **66**

Note: Gφ [rad/rad] = 0.15915494

Transit. density (0 to 1) : 100%

-> PDs with reconfirmation of the previous detection in case of a missing transition are used.
This is simulated (with some approximation) by setting D_T = 100%

Comparator range [rad] = 3.14E+000

G_{VCO} = VCO Gain = 4.15E+008

[rad/(sec*volt)]

G_f = Filter HF gain [V/rad] = 8.00E-002

one time step = Δt [sec] = 2.87E-009

ω_{plp} (ω_{plp} >> ω_z) = 2.00E+008

= high-frequency pole of the charge pump (smoothes the transitions of the filter output)

Filter (linear) range [+/- V] = 1.00E+000

VCO drive range = *-1.00000* *+1.00000000* *[volt]*

Input Ramp			Input Sinusoid		
Start time [norm. time]	Initial Step [rad]	Ramp Slope [rad/sec]	Start time [norm.time]	Angular Frequency	Amplitude [rad]
100	**-3.000**	**-7.00E+005**	**2000**	**1.00E+007**	**6.00E-001**

A simplified simulation is made, using two identical phase detectors,
one applied to the nominal input and the other to the input delayed by π/2 radian.