BLonD Code Structure: Initilisation of Classes

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Current Structure

GeneralParameters

R, E_s, α, N_t, m_p, q_p

→ β, γ, T_0, ω_0, η…

FullRing AndRF

Monitors

Plots

OPTIONAL

Impedance

Slices

→ Induced voltage

MULTIPLE

RFParameters

h, V, φ_{RF}, n_{RF}

→ f_{RF}, f_{s0}, Q_s, φ_s…

OPTIONAL

RFNoise & FB

GeneralParams, RFParams, Slices

OPTIONAL

PhaseLoop

GeneralParams, RFParams, Slices, (Noise)

MULTIPLE

Tracker

RFParams, Beam

opt: PL, RFNoise, FB

Beam

Δt, ΔE, ID, m_p, q_p

β, γ, E_s, p_s (present turn)

OPTIONAL

Beam Generation

FullRingAndRF, Beam

opt: Impedance

Slices

‘property’ of Beam

BASIC VARIABLES

GeneralParameters

R, E_s, α, N_t, m_p, q_p

→ β, γ, T_0, ω_0, η…

FullRing AndRF

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Beam

Δt, ΔE, ID, m_p, q_p

β, γ, E_s, p_s (present turn)

Beam Generation

FullRingAndRF, Beam

opt: Impedance

Slices

‘property’ of Beam

Suggested Structure

BASIC VARIABLES

FullRFParameters

Monitors

OPTIONAL

Impedance

Slices

→ Induced voltage

Beam

Δt, ΔE, ID, m_p, q_p

FullTracker

Plots

MULTIPLE

RFParameters

h, V, φ_{RF}, n_{RF}

→ f_{RF}, f_{s0}, Q_s, φ_s…

OPTIONAL

RFNoise & FB

GeneralParams, RFParams, Slices

OPTIONAL

PhaseLoop

GeneralParams, RFParams, Slices, (Noise)

MULTIPLE

Tracker

RFParams, Beam

opt: PL, RFNoise, FB

OPTIONAL

Beam Generation

FullRFParams, Beam

opt: Impedance

GeneralParameters

R, E_s, α, N_t

→ β, γ, T_0, ω_0, η…

→ β, γ, E_s, p_s (present turn)

Slices

'property' of Beam

In Logical Order

1

Beam

Δt, ΔE, ID, m_p, q_p

Slices

'property' of Beam

GeneralParameters

R, E_s, α, N_t
→ β, γ, T_0, $ω_0$, η…
→ β, γ, E_s, p_s (present turn)

MULTIPLE

RFParameters

h, V, $φ_{RF}$, n_{RF}
→ f_{RF}, f_{s0}, Q_s, $φ_s$…

FullRFParameters

2

OPTIONAL

Beam Generation

FullRFParams, Beam

opt: Impedance

OPTIONAL

RFNoise & FB

GeneralParams, RFParams, Slices

OPTIONAL

PhaseLoop

GeneralParams, RFParams, Slices, (Noise)

OPTIONAL

Impedance

Slices

→ Induced voltage

3

MULTIPLE

Tracker

RFParams, Beam

opt: PL, RFNoise, FB

FullTracker

Monitors

Plots

Actions required

- Join RFNoise and NoiseFB
- Eliminate multiple variables, always use variables from the source class
- Make Beam, GeneralParameters, RFParameters independent
- Split FullRingAndRF into FullRFParameters and FullTracker
- Impedance built into the tracker: first full kick, then drift

Logo suggestion