Physics Performance and Benchmarking Chapter of LOI

- So far we have only created a section and subsection outline.
- If modelled after the DOD, this chapter would include Detector Simulation, Subsystem Physics Performance, and the Physics Benchmarking Results.
- Simulation and Benchmarking certainly belong here, but is this where we want to put the subsystem performance?

4	Phy	sics P	erformance and Benchmarking	53
	4.1	Simula	ation of SiD.	53
		4.1.1	Beampipe:	55
		4.1.2	Vertex Detector:	55
		4.1.3	Tracker:	56
		4.1.4	Calorimeters:	58
		4.1.5	Solenoid:	59
		4.1.6	Muon System:	59
		4.1.7	Masks and Far Forward Detectors	59
	4.2	Subsy	stem Performance of SiD	60
		4.2.1	Vertex Detector Performance	60
		4.2.2	Tracker Performance	60
		4.2.3	Calorimeter and Energy Flow Performance	60
		4.2.4	Far Forward Detector Performance	60
		4.2.5	Muon System Performance	60

4.3	Benchmark Reactions			
	4.3.1	$e^+e^- \to e^+e^- H , \;\; \mu^+\mu^- H , \;\; \sqrt{s} = 250 \; {\rm GeV} . \; . \; . \; . \; . \; . \; . \; . \; . \; .$	61	
	4.3.2	$e^+e^- \to ZH \; , \; H \to c\bar{c} \; , \; \mu^+\mu^- \; , \; Z \to \nu\bar{\nu} \; , \; \sqrt{s} = 250 \; {\rm GeV} \; \; . \; \; . \; \; . \; \; .$	63	
	4.3.3	$e^+e^- \to ZH \; , \; H \to c\bar{c} \; , \; \mu^+\mu^- \; , \; Z \to q\bar{q} \; , \; \sqrt{s} = 250 \; {\rm GeV} \; \; . \; . \; . \; .$	63	
	4.3.4	$e^{+}e^{-} \to \tau^{+}\tau^{-}, \sqrt{s}=500 \text{ GeV} \dots \dots \dots \dots \dots \dots$	63	
	4.3.5	$e^+e^- \to t\bar{t}, \ t \to bW^+, \ W^+ \to q\bar{q'}, \ \sqrt{s} = 500 \ {\rm GeV} \ . \ . \ . \ . \ .$	63	
	4.3.6	$e^+e^- \to \tilde{\chi}_1^+ \tilde{\chi}_1^- / \tilde{\chi}_2^0 \tilde{\chi}_2^0$, \sqrt{s} =500 GeV	63	
	4.3.7	$e^+e^- o ZHH$, $H o bar b$, $\sqrt s = 500 \; { m GeV}$	63	
	4.3.8	$e^+e^- \to e^+e^-(\gamma), \ \mu^+\mu^-(\gamma), \ \sqrt{s}=500 \text{ GeV } \dots \dots \dots$	63	
References				