

# Pub Plan in Performance Group

H	1	Optimisation of the vertex detector and measurement of Higgs decays to second-generation quarks at the CEPC	H. Yang, M. Ruan, et al	JHEP 03 (2026) 141	Published in 2026	Vertex + Performance, based on Ref-TDR with delphes; Evaluation of performance with different vertex designs, number of layers, etc.
H	2	Hadronic Decay Branching Ratio Measurements of the Higgs Boson at Future Colliders Using the Holistic Approach	Y. Zhu, M. Ruan, et al	HiHEP 2026, 2 (1), 5	Published in 2026	further development of ML@CEPC
t	3	Precision measurement of the WW fusion cross section at $\sqrt{s} = 360$ GeV at the CEPC	Y Hou, T Yu, H Liao	EPJST(2026)	Published in 2026	analysis not in TDR, but based on RefTDR full sim
B S M	4	Search for Long-lived Particles at Future Lepton Colliders Using Deep Learning Techniques	X Chen, L Li	FOP 2026, 21(5)	Published in 2026	Analysis in TDR, but paper finished before TDR, and based on CDR baseline detector; not much difference. Muon+ECAL+HCAL+Performance;
t	5	Exploring the tt threshold at an electron-positron collider	L Li, Y Lin, X Sun	Submitted to PRD	in review	<b>Analysis in TDR</b> , futher optimized
Z	6	Prospect for measurement of CP-violating parameters of $B_s^0 \rightarrow \phi\gamma$ at the Tera Z factory	S Chen, H Wang, M Ruan	Submitted to JHEP	refrees' comments replied	still based on CDR detector; plan to add discussion and brief evaluation on the sensitivities with RefTDR detetor,
H	7	Deep-learning jet flavor tagging for precision hadronic Higgs measurements at future e+e- Higgs factories	M. Ruan, H. Yang, et al	JHEP	submitted to arxiv	new version based on RefTDR with Delphes according to referees' request

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H	8	Higgs Recoil mass at CEPC	Y Li, C Zhang	TBD	Draft in 4 m submission in 5 m	Analysis in TDR ; missing Z(ee)H channel, evaluating the potential to add Z(ee)H channel
Z	9	Simultaneously constrain R <sub>b</sub> , R <sub>c</sub> and R <sub>q</sub> with future lepton collider at Z pole	B Liu, Z Liang (TBD)	TBD	submit by end of this year	Analysis in TDR: related to vertex tagging perf, need to better evaluate systematic uncertainties and beam background
H	10	Search for Higgs boson invisible decays at the CEPC	G Liu, M Chen	TBD (CPC?)	Draft in 4 m; submission in 5 m	Analysis in TDR, plan to add NN based analysis and JOI jet flavor tagger to improve further sensitivities
Z	11	Measurements of Forward–Backward Asymmetry at the CEPC with the TDR Reference Detector	M Li, S Han	EPJS or CPC	submit by end of this year	AFB (mu) Analysis in TDR, and needed for Master degree. Plan to also include Z->ss, bb, cc.
Z	12	Prospect for direct time-dependent CP violation searches at a future Z factory	S Chen, Z Yang	TBD	~1 year	extension of RefTDR analysis, fesibility study with toy
B S M	13	Prospects for smuon pair production in the future e–e+ Higgs factories	X Zhuang, F Lyu, D Xu	TBD	~2 years	Analysis in TDR, but need reproduce samples due to very tight filters before + lack of manpower curently
H	14	Photon Performance with the CEPC reference detector	Reda, Joao, Fangyi, Yang	TBD	TBD	Analysis in TDR, suggested to be included in a ECAL/photon performance paper

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t	15	Precision Determination of Top-Quark Electroweak Couplings at the CEPC	M Biyabi, Gang Li, H Liao, et al	EPJC	Draft ready; submission in 3 m	
H	16	Study of electron Yukawa coupling at CEPC	S Feng, G Li, H Liao	EPJC	Winter	Needed for Master Degree
W	17	CKM matrix measurement with $e^+e^- \rightarrow W^+W^-$	Zhang Z, LI G, et al	EPJC	drafting, 4 months	
Z	19	Measuring AFB with Z to hadrons	Liao L, Li G, et al	EPJC	drafting, 4 months	AFB(bcs), also measure $\sin^2\theta_W$ , and take into account the longitudinal polarization. Might be merged with above item 14.
H	19	Measurements of CP Properties in $H \rightarrow gg$ Decays at the CEPC with the TDR Reference Detector	M Li, Y Zhu, S Han	TBD	submit by end of this year	this is a subtopic within a long-term quantum simulation project
Z	20	Measurement of the Z-Boson Width at the CEPC Using Transverse Polarization with the TDR Reference Detector	M Li, S Han, G Li	TBD	TBD	Proof of principle studies still ongoing
H	21	Search for $H \rightarrow ss$	Y Huang, M Ruan, H Yang	TBD	2027	plan to combine multi channels