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Search for additional scalar bosons at the FCC-ee TIANYU JUSTIN YANG, Massachusetts Institute of Technology MIT, FCC-EE COLLABORATION — As a proposed Higgs factory, the cornerstone of the FCC-ee physics program is the exploration of the Higgs boson at center-of-mass energies of 240 to 365 GeV. A direct and model-independent measurement of its coupling to the Z boson through the study of the Z boson recoil mass spectrum. The recoil mass analysis strategy can be deployed to search for non-SM Higgs boson decays such as Higgs boson to invisible decays or more exotic signatures. The mass spectrum recoiling the Z boson can also be explored in searches for new scalars with coupling to the Z boson. The extremely large FCC-ee data samples especially at lower center-of-mass energy offer excellent sensitivity.

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