## Contribution submission to the conference SMuK 2023

**Prospects for measuring di-Higgs production at the ILC** — •JULIE TORNDAL<sup>1,2</sup>, JENNY LIST<sup>1</sup>, and YASSER RADKHORRAMI<sup>1,2</sup> — <sup>1</sup>Deutsches Elektronen-Synchrotron DESY, Hamburg — <sup>2</sup>Universität Hamburg, Hamburg, Germany

The Higgs mechanism is a central part of the Standard Model (SM). However, at this point in time, it has not been established experimentally which can only be done by reconstructing the Higgs potential. In the SM, the shape of the potential is determined by the Higgs selfcoupling, which can be measured directly and model-independently at future linear e+e- colliders through di-Higgs production.

The Interntional Linear Collider (ILC) offers a clean experimental environment and a physics programme with sufficient energies to produce di-Higgs events. The measurement suffers from small production cross sections and large jet multiplicity, imposing high standards on the reconstruction tools. Modern reconstruction tools have seen a large improvement since the di-Higgs analysis was last visited almost 10 years ago. These improvements are foreseen to improve the precision, and an analysis strategy is presented focusing on an accurate event reconstruction and Z/H separation. Other aspects such as the the centre-of-mass energy and BSM effects might also influence the reachable precision and will be considered.

Part:	Т
Туре:	Vortrag;Talk
Topic:	2.12 Higgs-Boson: Zerfall in Bosonen;
	2.12 Higgs Boson: Decay in Bosons
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