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Fully Differential Higgs Pair Production in Association With a Vector Boson at NNLO in QCD

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We present a fully differential next-to-next-to-leading order calculation of the Higgs pair production in association with a Z boson, which is important for probing the trilinear Higgs self-coupling. The next-to-next-to-leading-order corrections enhance the next-to-leading order total cross sections by a factor of 1.2~1.5, depending on the collider energy, and change the shape of next-to-leading order kinematic distributions. We discuss how to determine the trilinear Higgs self-coupling using our results.

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