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Autore	Cheng Yangyang
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Nota di contenuto	Introduction -- The Standard Model and Beyond -- An Overview of Dark Matter -- The ATLAS Experiment at the Large Hadron Collider -- Dark Matter Searches at ATLAS -- Dark Matter + Higgs(bb): Overview -- Dark Matter + Higgs(bb): Z - 2HDM Simplified Model -- Dark Matter + Higgs(bb): Physics Objects -- Dark Matter + Higgs(bb): Event Selection -- Dark Matter + Higgs(bb): Background Processes -- Dark Matter + Higgs(bb): Systematic Uncertainties -- Dark Matter + Higgs(bb): Results -- Conclusion -- References. .
Sommario/riassunto	This thesis reports on the search for dark matter in data taken with the ATLAS detector at CERN’s Large Hadron Collider (LHC). The identification of dark matter and the determination of its properties are among the highest priorities in elementary particle physics and cosmology. The most likely candidate, a weakly interacting massive particle, could be produced in the high energy proton-proton collisions at the LHC. The analysis presented here is unique in looking for dark matter produced together with a Higgs boson that decays into its

dominant decay mode, a pair of b quarks. If dark matter were seen in this mode, we would learn directly about the production mechanism because of the presence of the Higgs boson. This thesis develops the search technique and presents the most stringent production limit to date.