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Nota di contenuto	Chapter 1. Introduction -- Chapter 2. The Standard Model and Its Supersymmetric Extension -- Chapter 3. The LHC and the CMS Experiment -- Chapter 4. Data Collection and Event Selection -- Chapter 5. Data Analysis -- Chapter 6. Results and Interpretations -- Chapter 7. Conclusion.
Sommario/riassunto	This Ph.D. thesis is a search for physics beyond the standard model (SM) of particle physics, which successfully describes the interactions and properties of all known elementary particles. However, no particle exists in the SM that can account for the dark matter, which makes up about one quarter of the energy-mass content of the universe. Understanding the nature of dark matter is one goal of the CERN Large Hadron Collider (LHC). The extension of the SM with supersymmetry (SUSY) is considered a promising possibilities to explain dark matter. The nominated thesis describes a search for SUSY using data collected by the CMS experiment at the LHC. It utilizes a final state consisting of a photon, a lepton, and a large momentum imbalance probing a class

of SUSY models that has not yet been studied extensively. The thesis stands out not only due to its content that is explained with clarity but also because the author performed more or less all aspects of the thesis analysis by himself, from data skimming to limit calculations, which is extremely rare, especially nowadays in the large LHC collaborations.