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Nota di contenuto	Introduction -- Standard Models and What Lies Beyond -- Overview of Physical Cosmology -- Massive Neutrinos and How to Search for them with Cosmological Observations -- A Brief Interlude Statistical Methods in Cosmology -- Results and discussion of included papers -- Summary and Outlook.
Sommario/riassunto	The three neutrinos are ghostly elementary particles that exist all across the Universe. Though every second billions of them fly through us, they are extremely hard to detect. We used to think they had no mass, but recently discovered that in fact they have a tiny mass. The quest for the neutrino mass scale and mass ordering (specifying how the three masses are distributed) is an extremely exciting one, and will open the door towards new physics operating at energy scales we can only ever dream of reaching on Earth. This thesis explores the use of measurements of the Cosmic Microwave Background (the oldest light reaching us, a snapshot of the infant Universe) and maps of millions of galaxies to go after the neutrino mass scale and mass ordering. Neutrinos might teach us something about the mysterious dark energy powering the accelerated expansion of the Universe, or about cosmic inflation, which seeded the initial conditions for the Universe. Though

extremely baffling, neutrinos are also an exceptionally exciting area of research, and cosmological observations promise to reveal a great deal about these elusive particles in the coming years.

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