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Direct Searches for Dark Matter REYCO HENNING, UNC Chapel Hill / TUNL

One of the most significant outstanding questions in cosmology is the origin and nature of "dark matter." The existence of dark matter via its gravitational effects has been established, but the exact nature of the this dark matter remains elusive. What makes this mystery even more compelling is the strong evidence that dark matter is non-baryonic and may likely consist of some unknown fundamental particle or particles. This talk will focus on experimental searches to directly detect tdark matter and to unravel the mystery of its composition. I will discuss the basic concept of direct detection and the experimental challenges that must be surmounted to reduce ubiquitous backgrounds.