WIMPs Weakly Interacting Massive Particle

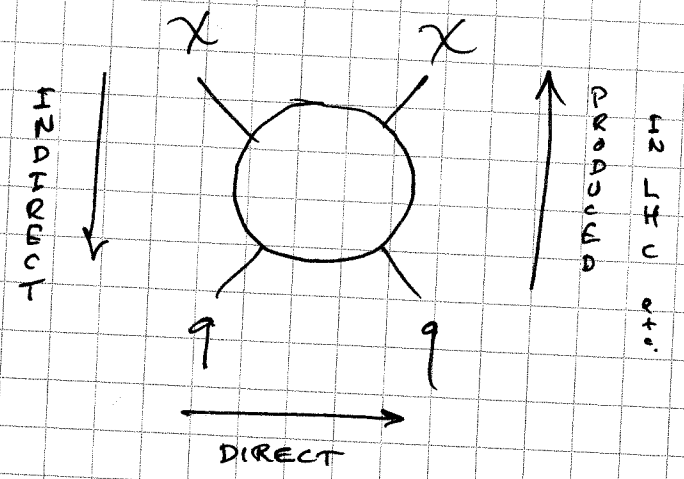
Leading candidate for the non-baryonic dark matter

Usually presumed to be the lightest stable particle in the hypothetical super symmetric sector (SUSY) (e.g., the neutralino)

In SUSY, every normal (standard model) particle has a susy partner particle. Minimal SUSY, with the fewest new parameters, called MSSM.
(Minimal Super-Symmetric Model)

The WIMP miracle: the weak force interaction scale ($m_\chi \approx 100$ GeV) is about right to leave a relic density that's about right to be the dark matter ($\Omega_\chi \sim 0.1 \pm$ a few dex)

WIMP detection



Direct detection: WIMPs scatter off nuclei in underground labs

Indirect detection: WIMPs are their own anti-particle; can annihilate into standard model particles, creating a source of cosmic rays & γ-rays.

WIMP production: Particle colliders that achieve energies $> M_\chi c^2$ could create WIMPs which might be recognized as a deficit in detected debris mass-energy.

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