The return of the Anyons - news from the fractional quantum Hall effect

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The fractional quantum Hall effect, first observed some four decades ago, is believed to be a system where Anyons - particles of fractional charges and fractional quantum statistics - exist. In the last year, several important developments have brought the physics of Anyons back into the limelight. In particular, Anyons were shown to be quantum particles that can interfere as waves, and their traditional “alma mater”, the fractional quantum Hall effect, has been shown to exist without the application of any magnetic field.

I will review some of these developments and the theory behind them, making minimal assumptions of prior knowledge.