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ANYONS IN THE QUANTIZED HALL EFFECT AND IN MODELS OF HIGH TEMPERATURE SUPERCONDUCTORS

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Anyons, or excitations which obey fractional statistics, can occur in certain two-dimensional systems, or in multilayer systems which are sufficiently weakly coupled. Anyons occur in systems which exhibit the fractional quantized Hall effect, and in certain models for high temperature superconductivity. A necessary condition for anyons in high T_c materials is that they have a spontaneously broken time-reversal symmetry. Experiments to look for signs of broken time-reversal symmetry have produced results which appear to conflict with each other. We shall review some features of anyons in quantized Hall systems and in high T_c models.