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# Quasi-solvable gauge invariant hamiltonians via matrix product states

#### Abstract:

To know the exact ground state of hamiltonians on spin systems provided with physical properties such as gap, uniqueness of the ground state, exponential clustering, symmetries and two-body interactions is actually a dream. A seminar work of Fannes Nachtergaele and Werner published in 90's gave a solution about how to construct hamiltonians with the first three conditions provided of an ansatz for the structure of the states known as MPS. They also gave partial answers to the construction of systems with the last two properties, but they were far from providing a general frame. However, it is very important to have a general answer, since the first properties make the system interest for quantum computation, while the last ones make the system physical (realizable).

### 9 de abril de 2008 11:30 horas, Seminario 222 Facultad de Matemáticas, UCM