

# **Quantum correlations in the 1D spin-1/2 Ising model with added Dzyaloshinskii-Moriya interaction**

We have considered the 1D spin-1/2 Ising model with added Dzyaloshinskii-Moriya (DM) interaction and presence of a uniform magnetic field. Using the mean-field fermionization approach the energy spectrum in an infinite chain is obtained. The quantum discord (QD) and concurrence between nearest neighbor (NN) spins at finite temperature are specified as a function of mean-field order parameters. A comparison between concurrence and QD is done and differences are obtained. The macroscopic thermodynamical witness is also used to detect quantum entanglement region in solids within our model. We believe our results are useful in the field of the quantum information processing.