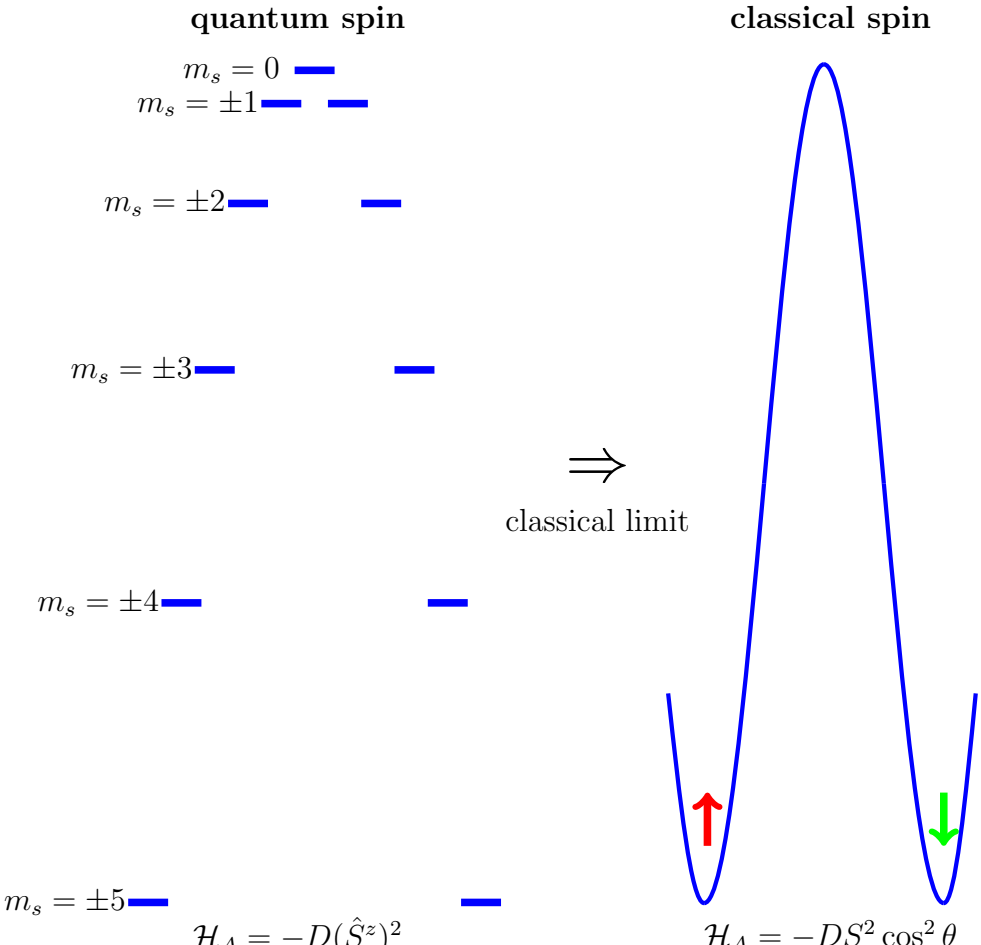
quantum spin
classical spin
$m_s = 0$
$m_s = \pm 1$
$m_s = \pm 2$
$m_s = \pm 3$
$m_s = \pm 4$
$m_s = \pm 5$
$\Rightarrow$
classical limit
$\mathcal{H}_A = -D(\hat{S}^z)^2$
$\mathcal{H}_A = -DS^2 \cos^2\theta$

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