Optical spectral weights and magnetic exchange interactions in Mott insulators with orbital degeneracy

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We outline a unified approach to magnetic and optical properties of Mott insulators at orbital degeneracy, which provides deep insight into the complex spin-orbital physics. It introduces partial sum rules for individual optical excitations which follow from the multiplet structure of transition metal ions. We show that the observed anisotropies and the temperature dependence of the optical spectral weights in $LaVO_3$ and $LaMnO_3$ follow from spin and orbital correlations and are well understood within this approach.