Optical Emission from quantum phases of the second Landau level
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PURDUE UNIVERSITY COLLABORATION, PRINCETON UNIVERSITY COLLABORATION — Optical emission across the host semiconductor bandgap has proven a powerful tool in examining the properties fractional quantum Hall states (fqhs). While the luminescence of fqhs in the first (N=0) Landau Level has been extensively studied, there are significantly fewer studies of the optical emission in the N=1 Landau Level. We report studies of luminescence in the filling factor range 4>ν>2 N=1 Landau level. The marked dependence on filling factor suggests that optical emission is here linked to competing quantum phases. A comparison of luminescence in a range about ν =7/3 with extensively studied optical emission near ν =1/3 creates venues to explore the competing quantum phases of the second Landau levels.

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