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Lifting line fields to director fields with bounded variation

Defects in liquid crystals correspond to singularities of line fields : maps with values into the projective plane. Lifting a line field to a director field amounts to specifying an orientation : a director field takes values into the sphere. We show that any line field with bounded variation (BV) can be lifted to a BV director field. Moreover we obtain an optimal estimate for the BV seminorm of the lifting. This is joint work with Radu Ignat.