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**Self-consistent theory of electronic states in topological broken-gap quantum wells**[1] R. WINKLER, Northern Illinois University — Recently broken-gap quantum wells made of InAs/GaSb/AlSb have raised great interest as they may show a gate-tunable phase transition from a trivial phase to a topologically protected quantum spin Hall phase. We present a quantitative self-consistent theory of electronic states in such systems taking into account the charge transfer between different layers which can substantially modify the level structure including the phase boundary between the inverted and non-inverted regime. We also discuss spin effects and the unusual Landau fans in a quantizing magnetic field.

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