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Topologically Massive Gravity from the Outside In COLIN CUNLIFF, University of California-Davis — The asymptotic solutions of cosmological topologically massive gravity (CTMG) are analyzed for values of the mass parameter in the range $\mu \geq 1$. At non-chiral values, a new term in the Fefferman-Graham expansion is needed to capture the bulk degree of freedom. The CDWW modes provide a basis for the pure non-Einstein solutions at all μ, with nonlinear corrections appearing at higher order in the expansion. The solutions at all values of the mass parameter, including the chiral point, share the same structure, indicating that the previously accepted view – that CTMG at generic μ is unstable, while chiral gravity at $\mu = 1$ is stable – is no longer tenable. Instead, the question of stability must be answered for CTMG as a whole.

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