The Generalized Mattig Relation for a Gauss Bonnet Gravity Model KEITH ANDREW, Western Kentucky University, NICK ZOLMAN, California Institute of Technology — In this work we study the form of the Mattig equation applied in a cosmological setting for spacetime metric gravity models described by the Gauss-Bonnet action. We start with expressing the Mattig relation for cosmological magnitudes in terms of standard metric functions and redshift values. Then we present the Gauss-Bonnet field equations and the associated limits for special solutions in an arbitrary number of dimensions. These solutions are then used to rewrite the Mattig relation with correction terms from the Gauss-Bonnet contributions. We compare these terms to the error bars associated with the observed late time accelerated expansion caused by the cosmological dark energy. We find that the Gauss-Bonnet couplings must be very small to match the observational data.

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