

Inpainting CMB maps using generative adversarial networks

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We propose a novel method for inpainting noisy masked CMB maps using GAN's (and maybe Autoencoders and variational autoencoders).

I. INTRODUCTION

The CMB has been one of the primary sources of information to understand the origin and evolution of the universe for many decades []. The

II. REVIEW OF CURRENT METHODS

Review literature and current methods - maybe point out where they fail.

III. INTRODUCING GANS

Introduction to GAN's in an intuitive way and the use case for CMB maps. Maybe describe (variational) au-

toencoders if we decide to use them.

IV. ANALYSIS

See how well GAN's do compared to standard techniques to reproduce the maps and maybe the Cl's.

V. CONCLUSION

The GAN's can reproduce the CMB maps with inpainting to XXX accuracy.

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