

# Test Article

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## Introduction

This is a test of LaTeX rendering.

## Mathematical Framework

The diffusion process is defined as:

$$q(\mathbf{x}_t \mid \mathbf{x}_{t-1}) = \mathcal{N}(\mathbf{x}_t; \sqrt{\alpha_t} \mathbf{x}_{t-1}, (1 - \alpha_t) \mathbf{I})$$

This formula should render perfectly in the PDF.

## Conclusion

Native LaTeX rendering produces perfect mathematical formulas.