

# Poincaré, modified logarithmic Sobolev and isoperimetric inequalities for Markov chains with non-negative Ricci curvature

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# Overview of the talk

Main result: \*high-level sentence\* for the zero-range process

The zero-range process

Interpretation of the result \*or other high-level sentence\*

From geometry to inequalities

Setup

Ricci for discrete processes

Modified Logarithmic Sobolev inequality for discrete processes  
with non-neg Ricci

Further inequalities

Poincaré inequality and the spectral gap

Isoperimetric inequality and Cheeger constant

Other applications

# The zero-range process

# Main result and interpretation

# Setup

# Distance $\mathcal{W}$

# Defining Ricci

# Ricci for the zero-range process



# The Modified Log-Sobolev inequality

# Modified Log-Sobolev inequality for the zero-range process

# Poincaré inequality

# Isoperimetric inequality

# example 1

## example 2