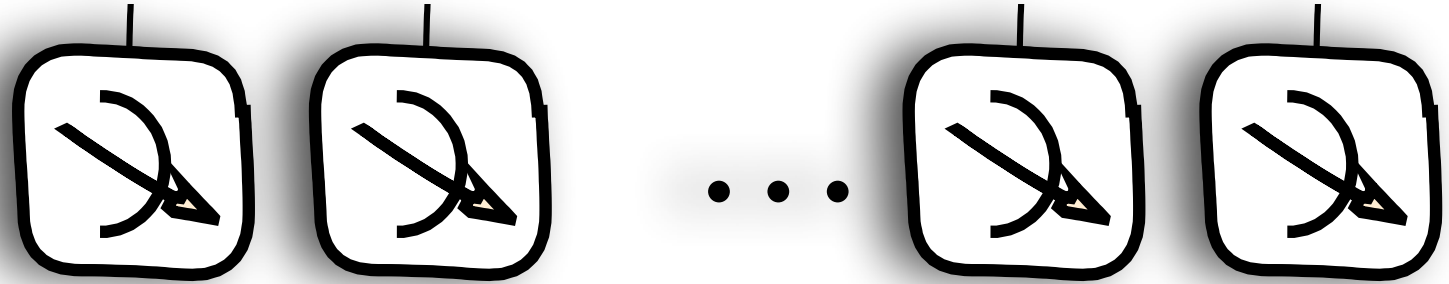

Jack Y. Araz

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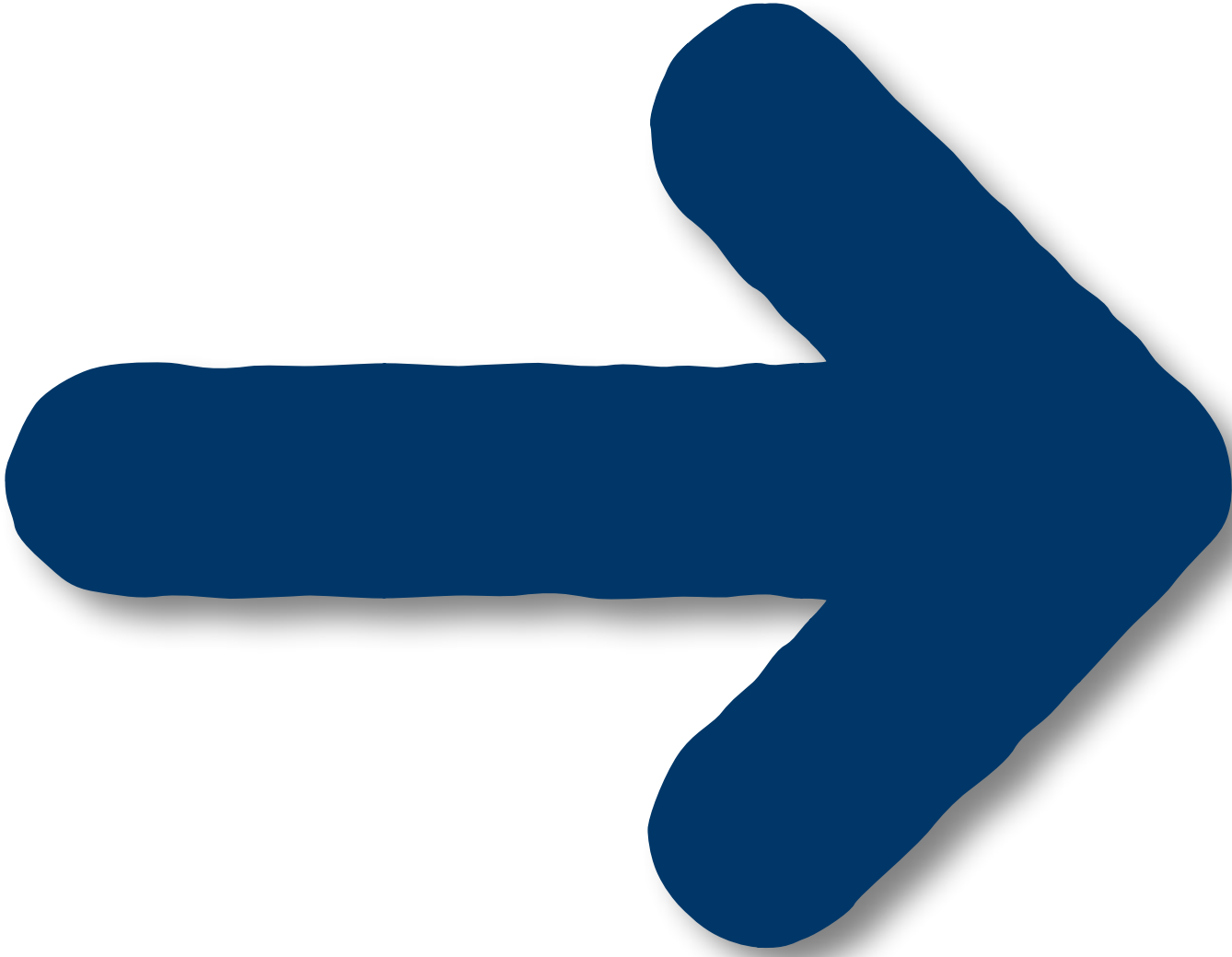
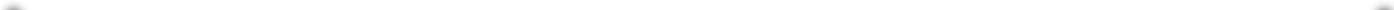
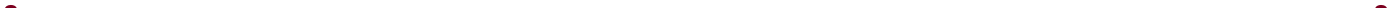
Jefferson Lab
EXPLORING THE NATURE OF MATTER


OLD DOMINION UNIVERSITY
1930

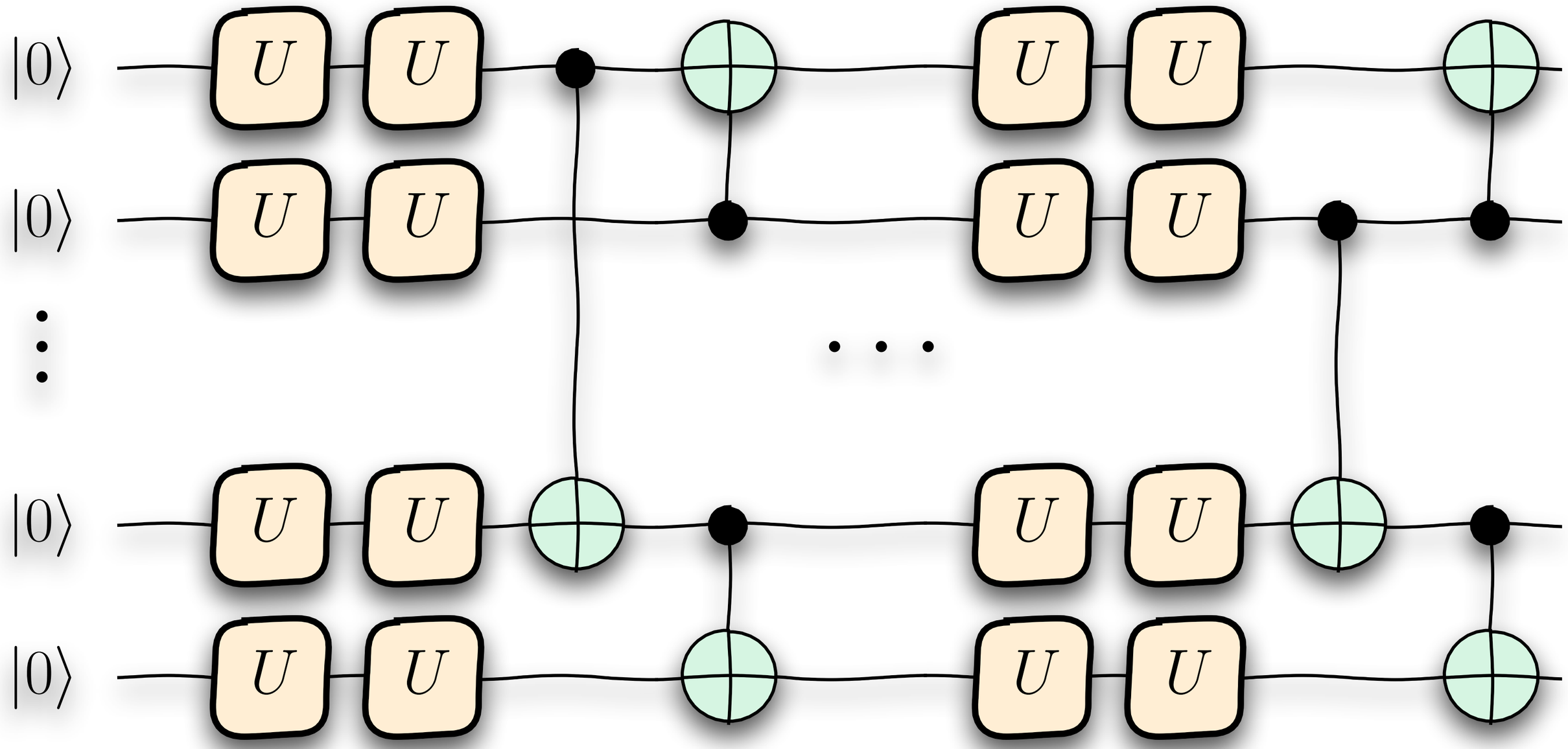






State preparation:


$U(\theta) \mid 0 \cdots \rangle$


$|0\rangle$
$|0\rangle$
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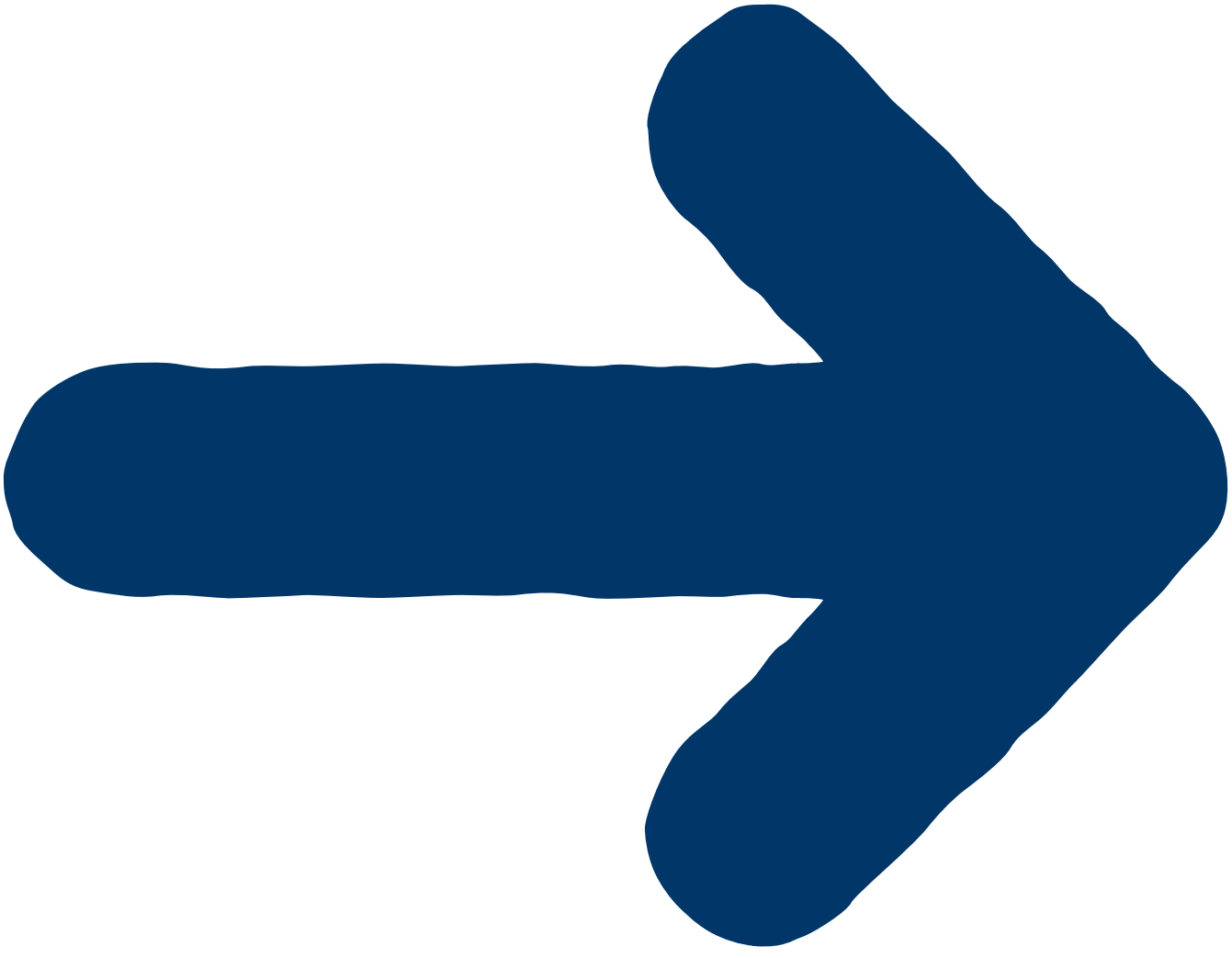
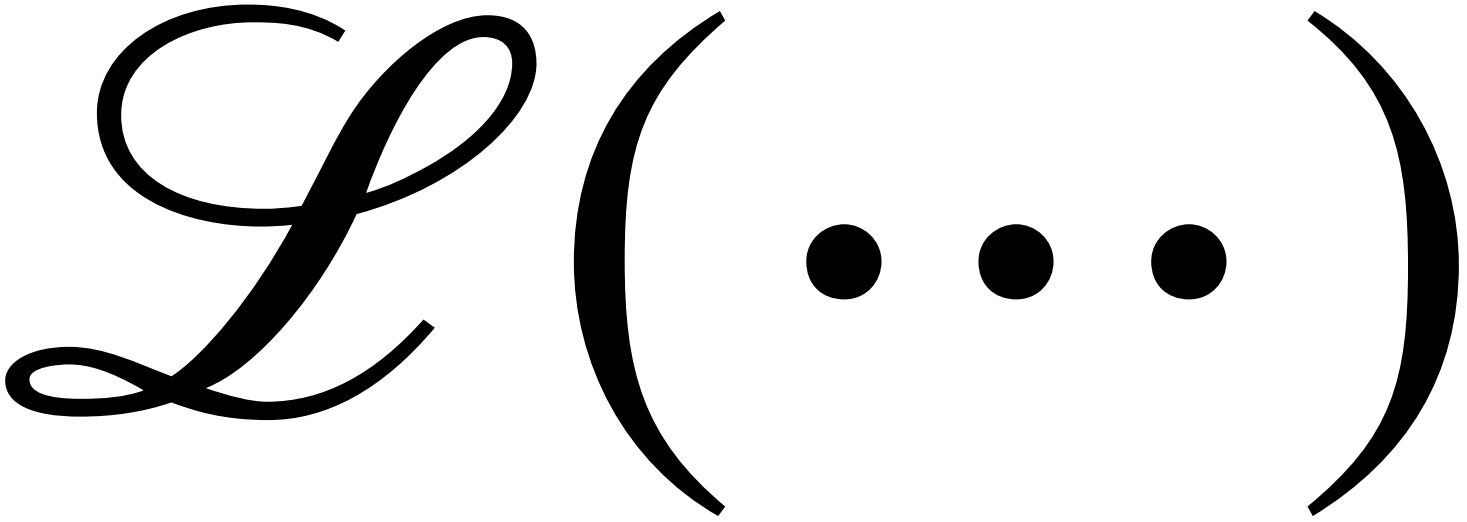
U

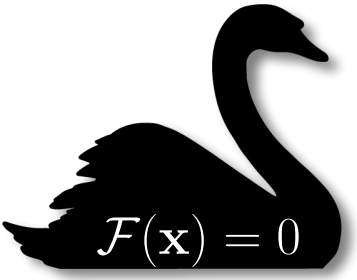




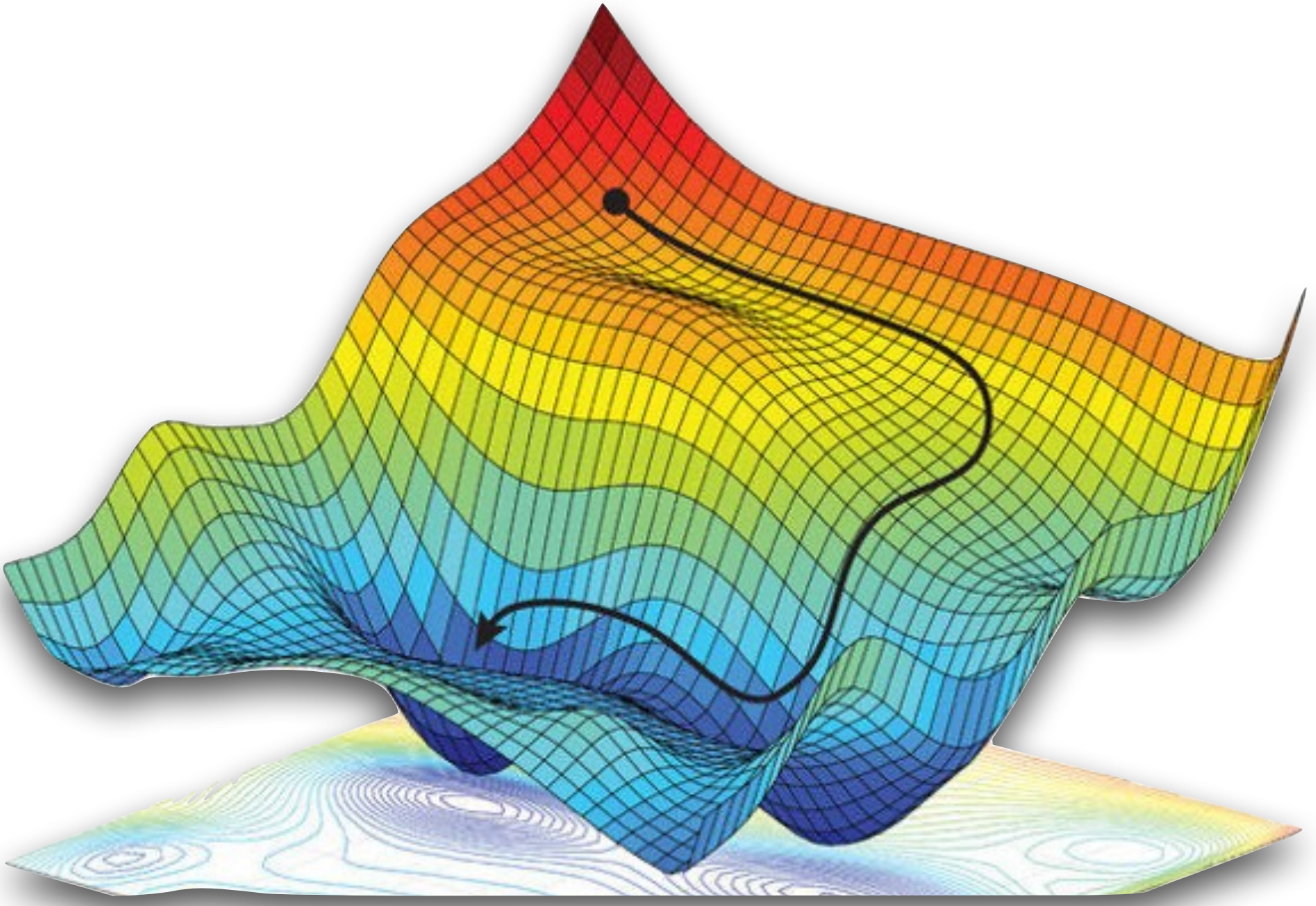
Problem definition

- Loss function: cross-entropy, mean squared error or a differential equation.

$$\min_{\theta} \mathscr{L}(\cdots)$$



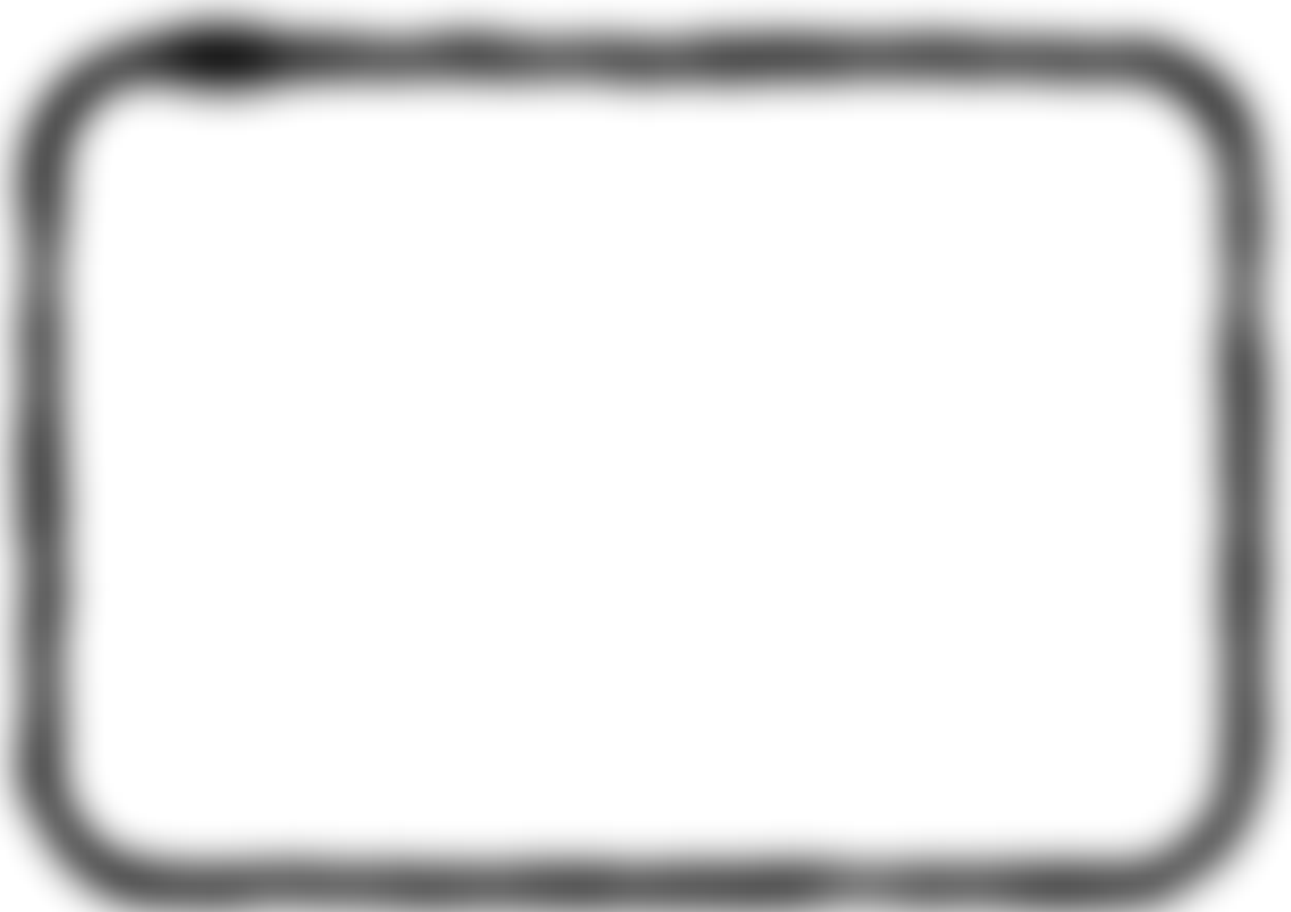
JYA, et al; arXiv: 2103.14575



loss function with

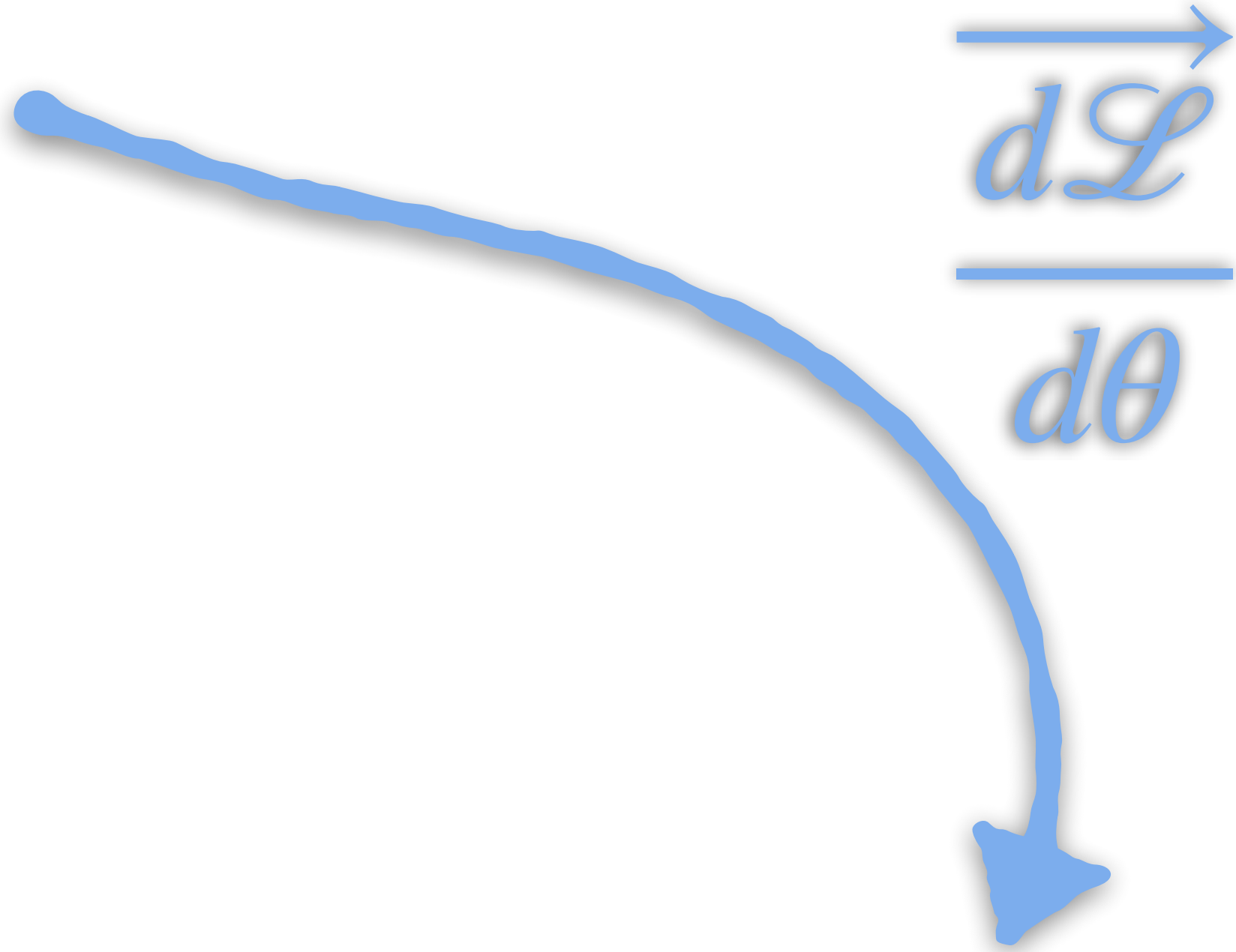
The behaviour of the

gradient descent



Input

Image credit: Francisco Lima


$\frac{d\mathscr{L}}{d\theta}$

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