

## To Catch and Reverse a Quantum Jump Mid-flight



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### Quantum

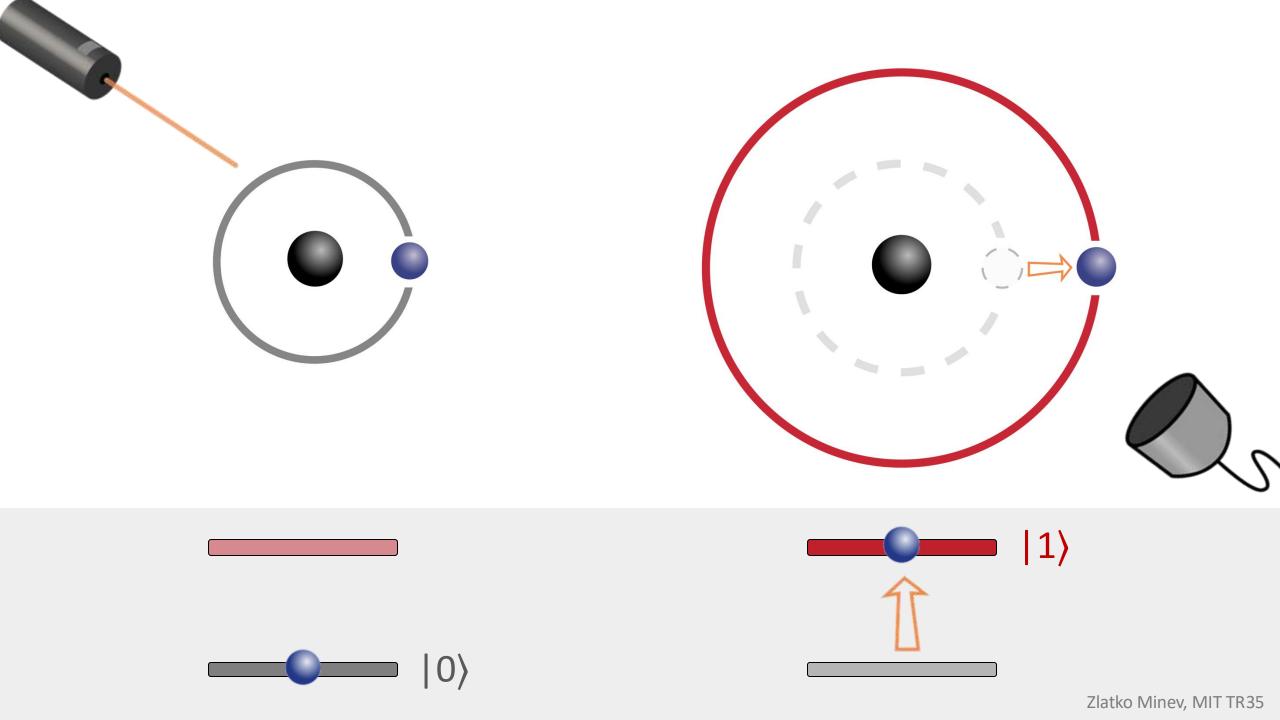
#### Discreteness



### Unpredictability



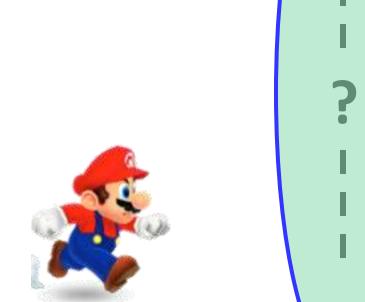




Quantum Jump: Until Now



 $|1\rangle$ 

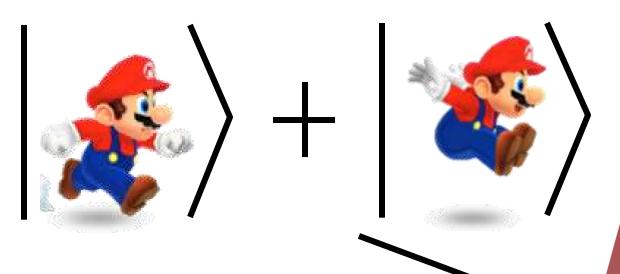


Discrete?
Instantaneous?
Unpredictable?

(U

Mario, Nintendo Zlatko Minev, MIT TR35

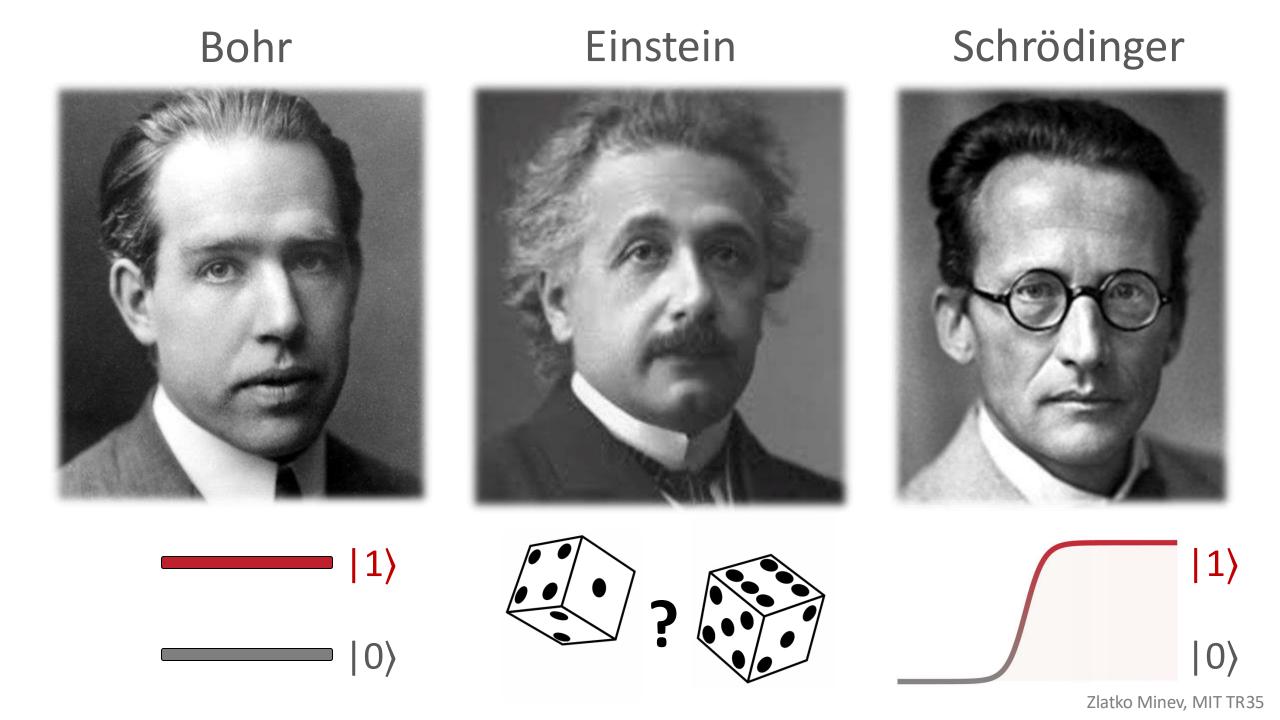
#### The Real Quantum Jump



Coherent superposition!

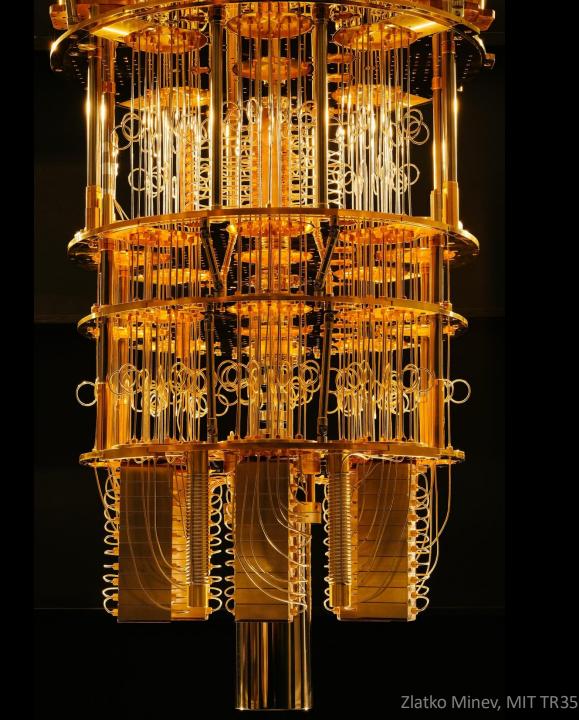
Continuous
Coherent
Degree of predictability

# **Predict & Control:** Catch and reverse jump mid-flight



# Quantum Computing: Error correction Quantum Sensing





There is more to the story of quantum physics ...

Not quite as discrete and random as we thought ...

Opens doors to otherwise inaccessible technology ...



#### Thank you!



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