

The Theory of Everything public lecture:

# QUANTUM GRAVITY AND STRING THEORY



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# SUMMARY

- ▶ QUANTUM MECHANICS IS IN GREAT SHAPE (THREE FORCES ARE EXPLAINED USING QUANTUM MECHANICS).
- ▶ GENERAL RELATIVITY IS IN GREAT SHAPE (THE FOURTH FORCE IS EXPLAINED USING GENERAL RELATIVITY).
- ▶ THEORY SUGGESTS THAT SOMETHING BIG IS MISSING (BOTH QM AND GR CANNOT ALWAYS BE RIGHT).
- ▶ EXPERIMENT SUGGESTS THAT SOMETHING BIG IS MISSING (DARK ENERGY, DARK MATTER, COSMIC INFLATION).
- ▶ IS IT HOLOGRAPHY? IS IT EMERGENT GRAVITY?  
IS IT QUANTUM COSMOLOGY? IS IT THE MULTIVERSE?