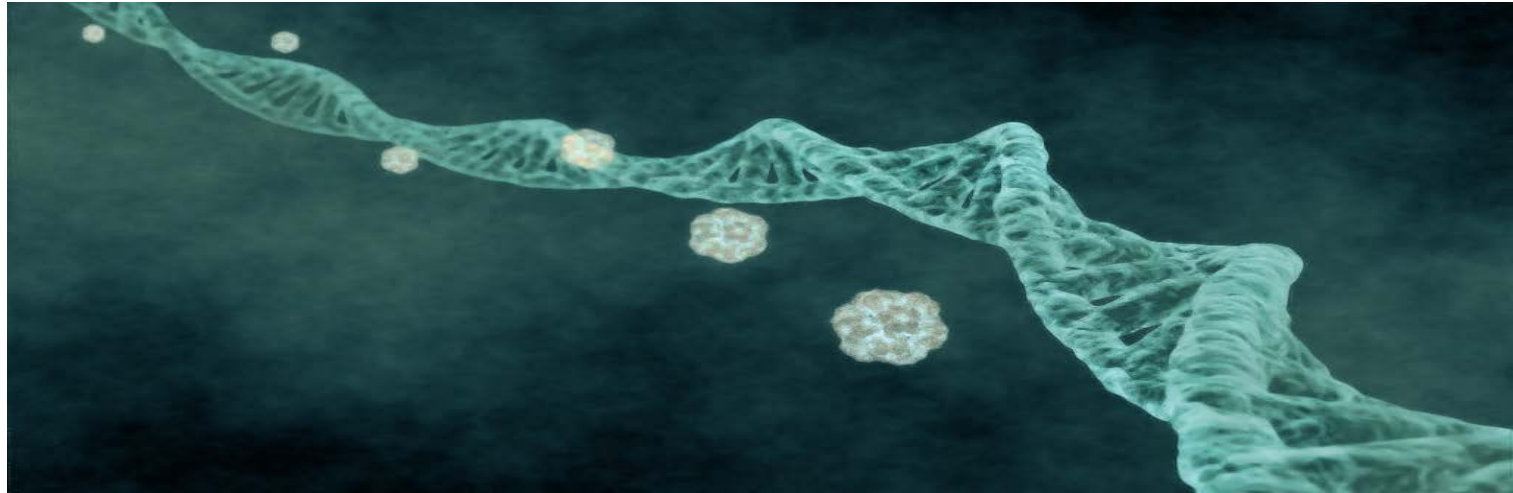


Determining mechanical properties of polymers by characterizing intermolecular interactions



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Fictional character or a real possibility?

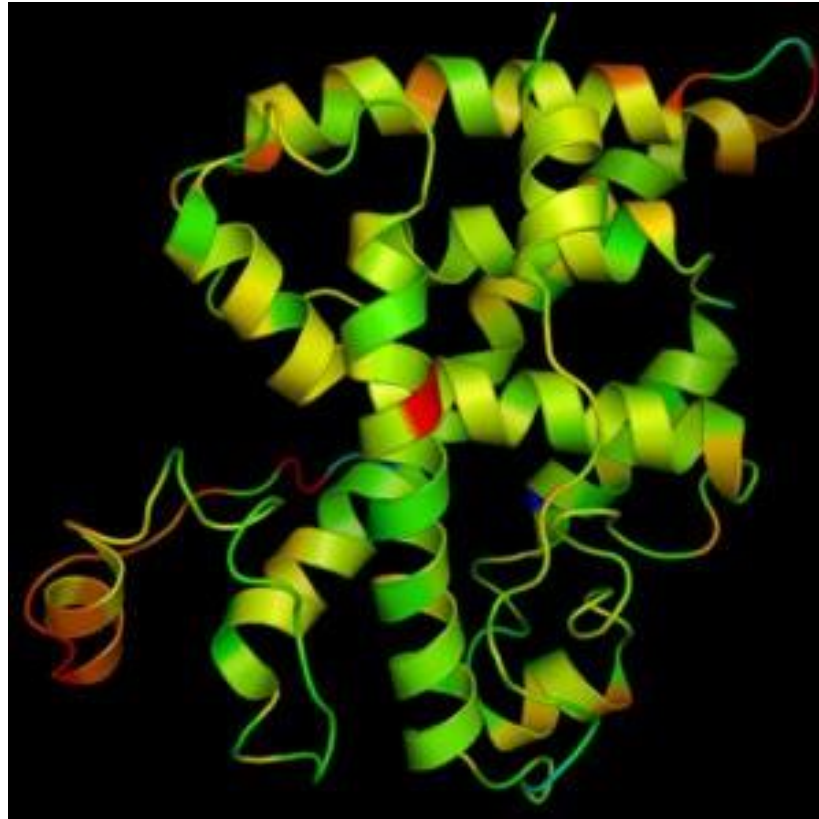


What we can do right now

Understanding the mechanical properties gives us an insight on how to achieve certain outcomes.



Understanding biological polymers can lead to advances in medicine.



How we are doing this?



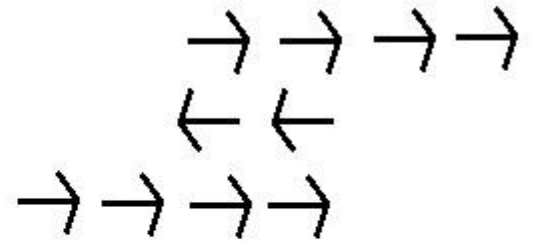
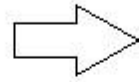
- Polymers behave like a spring
- spring stiffness is characterized by the spring constant

What is a Polymer?



How a polymer behaves



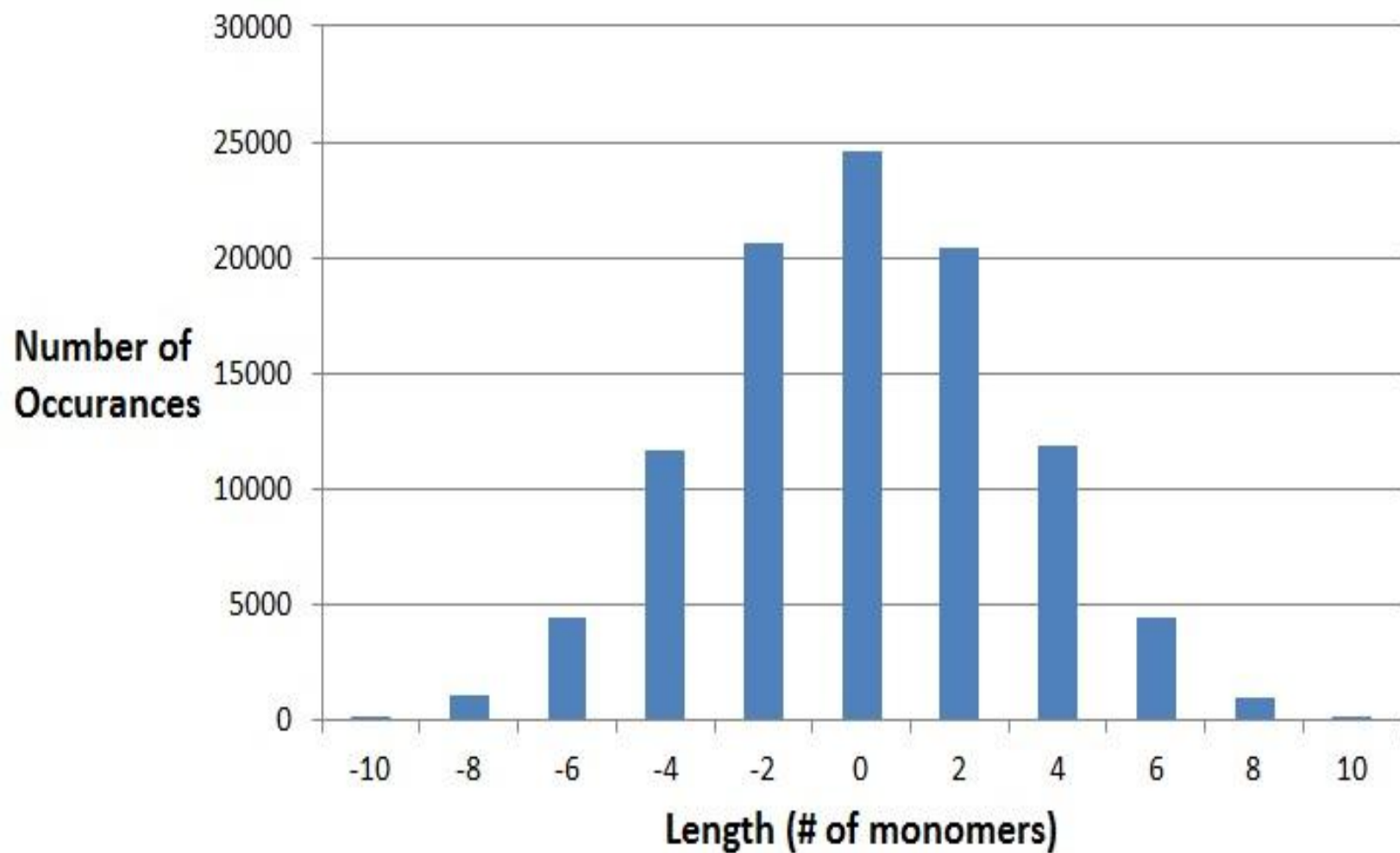


L = 6

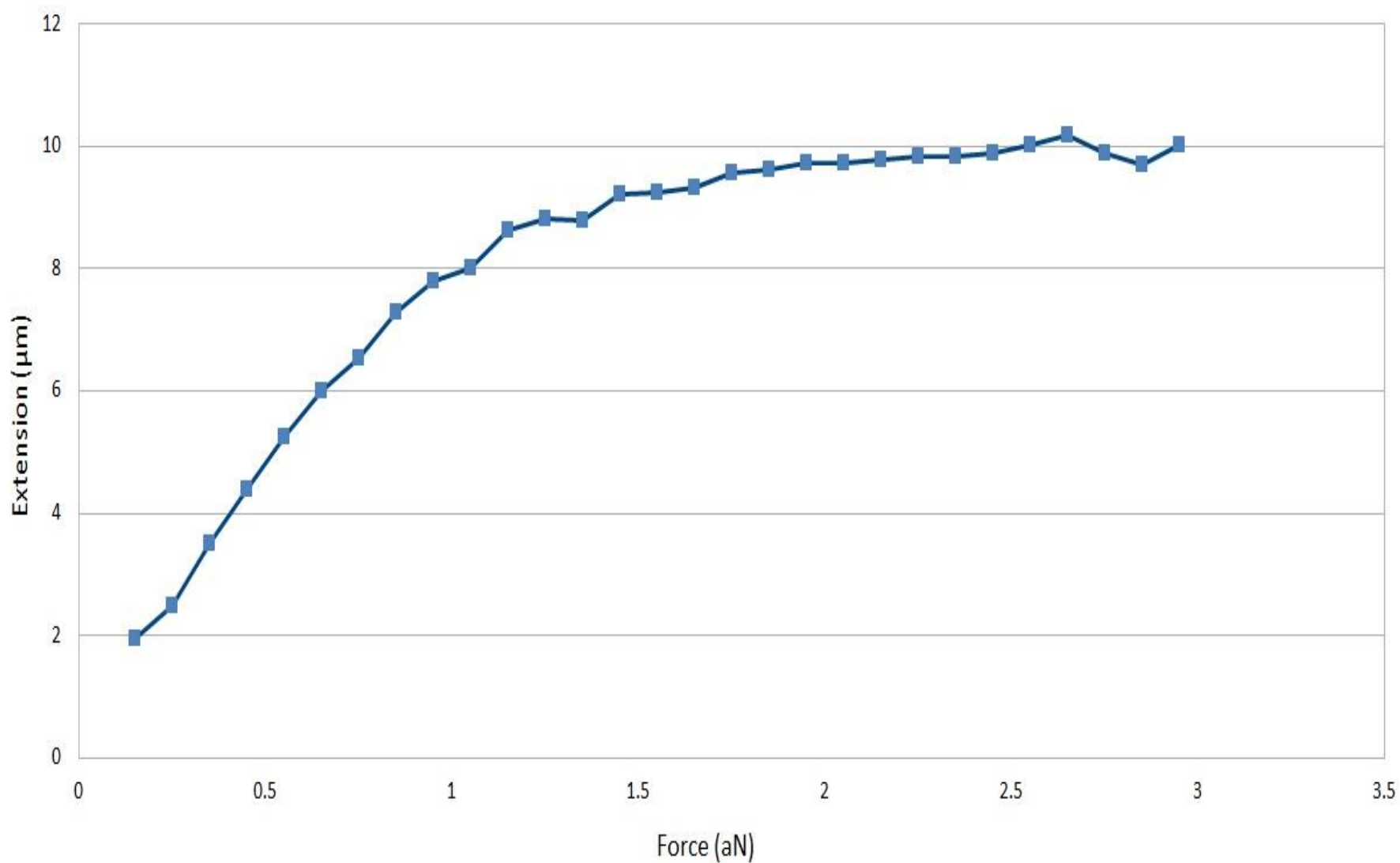
Monte Carlo Method



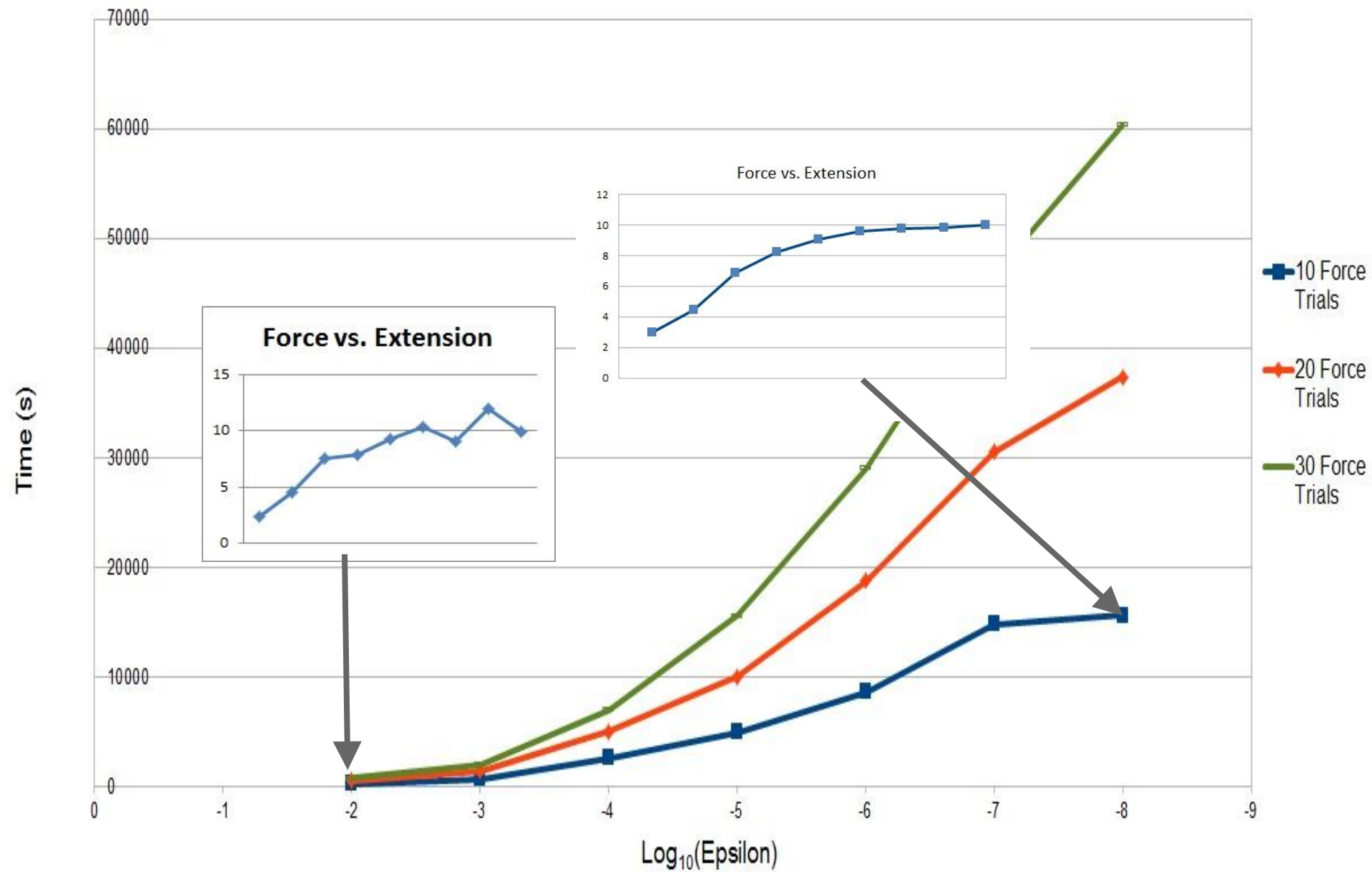
Polymer Length Count



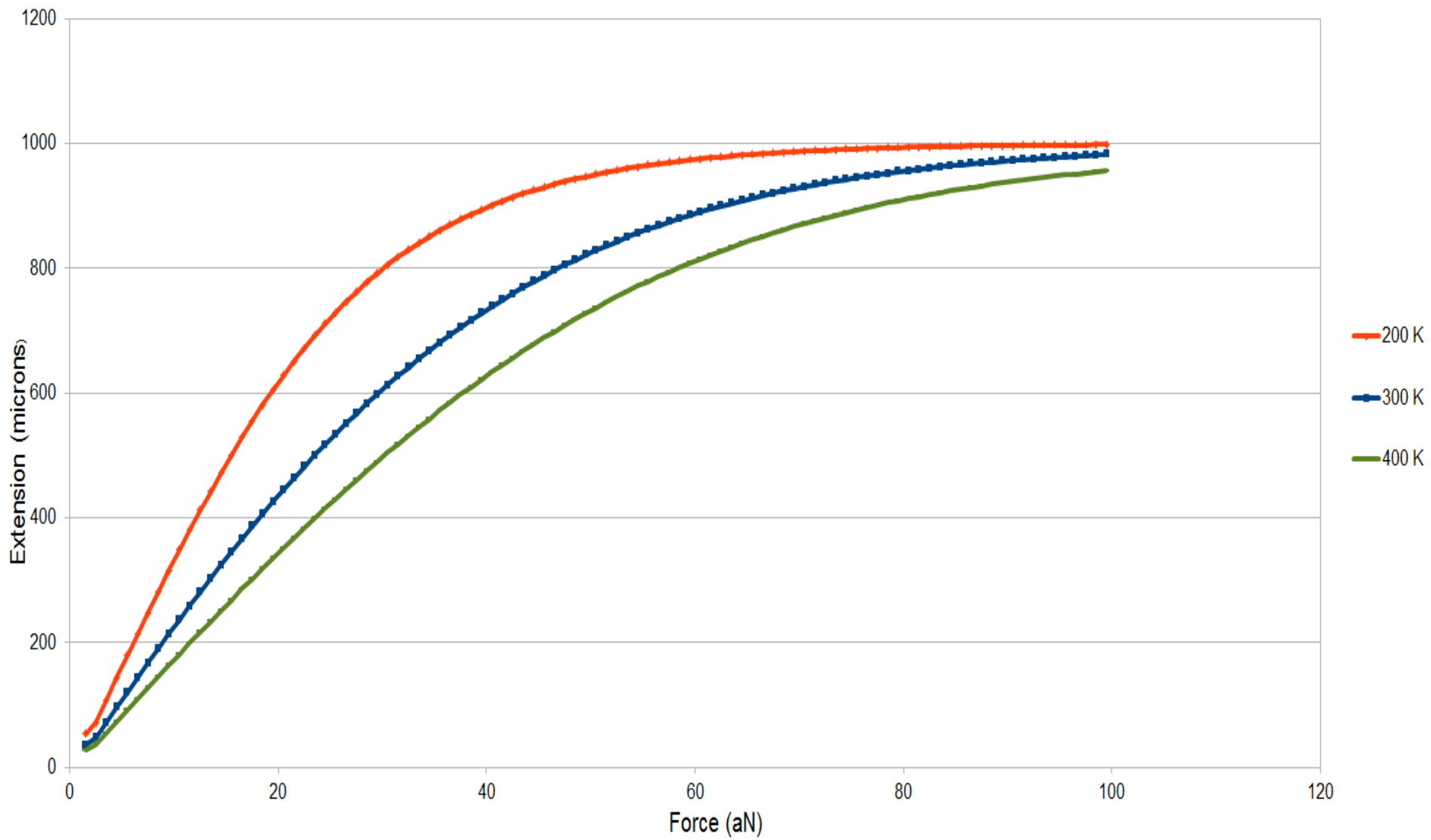
Effect of forces on polymer extension



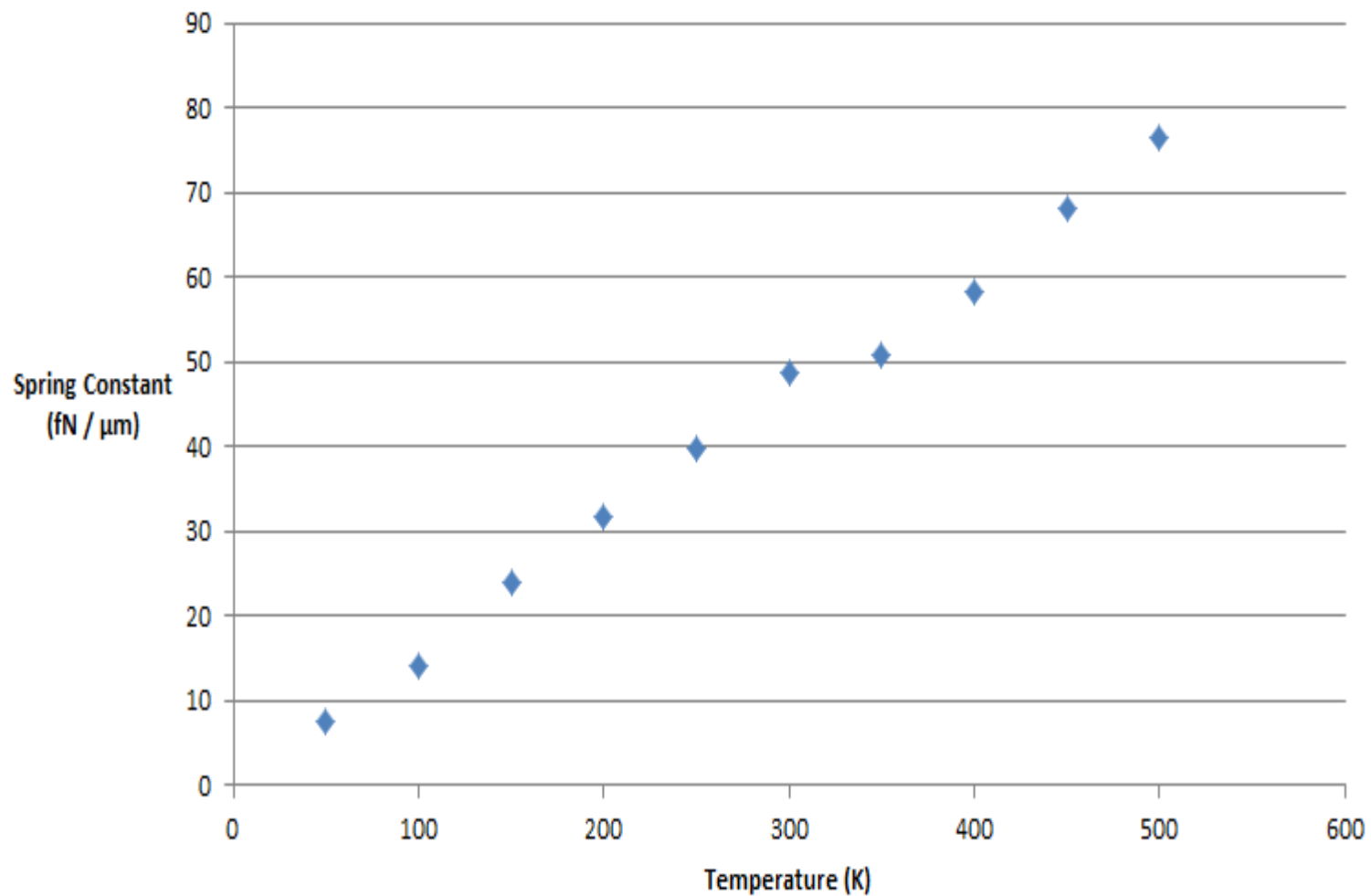
Time as a function of allowed error



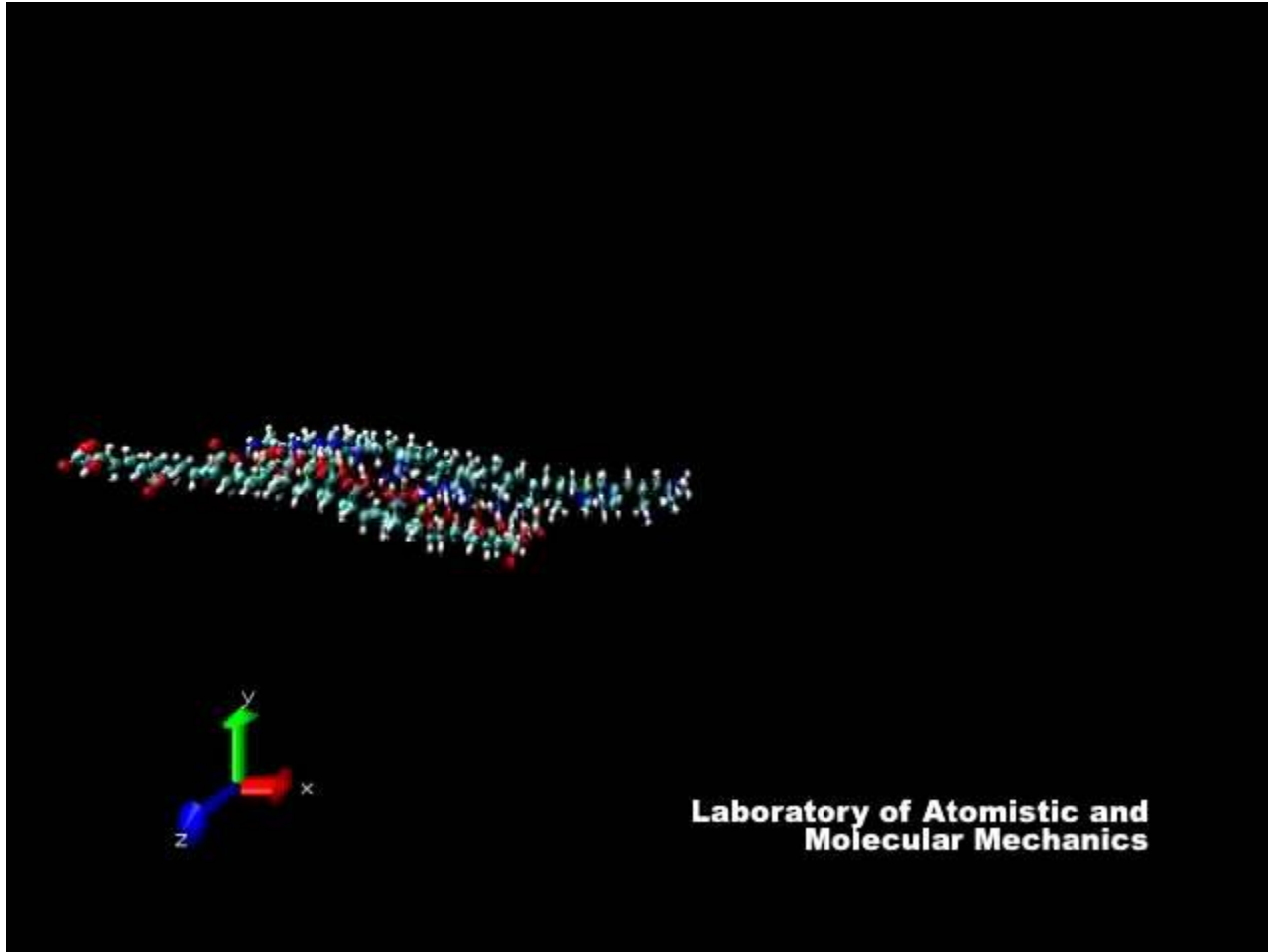
Effect of Temperature on Extension



Effect of Temperature on Spring Constant



Building a better model



Special Thanks



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Phil Pincus

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