Research at BU — Computer Simulations of SiO$_2$

Katharina Vollmayr-Lee
Department of Physics & Astronomy

March 7, 2017
(Summer) Research Students:
Laura Owens
Sean G. McMahon
Christopher H. Gorman
Robin Bjorkquist
Landon M. Chambers
Jakob A. Roman

& benefits in classroom

Collaborations Beyond Bucknell:
Annette Zippelius
Horacio E. Castillo
Jürgen Horbach
Karina Avila

Computers:
J. Dreese, M. Harvey, B. Temelso, G. P. Shrivastav

Department of Physics & Astronomy
Computer Simulations of SiO$_2$ Glass

Viscosity vs 1/Temperature:

[C.A. Angell et al. 1976]
Computer Simulations of SiO$_2$ Glass

Hidden Figures:
- Katherine G. Johnson
- Euler’s Method
- Space Shuttle

Molecular Dynamics Simulation:
SiO$_2$ glass:
**Results: Computer Simulations of SiO₂ Glass**

**Single Particle Jumps:**

- \( t_w \)-dep.: no. jump. part., not size, not time in between jumps

**Local Incoh. Interm. Scattering Function:**

- Scaling collapse


Similar results for fragile & strong glass formers!