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Fracture Mechanisms of Glass Particles under Dynamic Compression

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Highlights

- High speed synchrotron X-ray imaging was used to study the fracture of single and contacting glass particles.
- A modified Kolsky bar was used compress single, two, three, and five contacting particles dynamically.
- Cracking initiated under the particle-pin contact for single particle experiments.
- For multi-particle experiments, cracking initiated at the particle-particle contact and separated a fragment, which did not affect the ability of the particles to withstand loading.
- The final fracture mode for all experiments was explosive fragmentation.

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