

# Breakup of a 125 bubble cluster in superheated liquid oxygen

- Fluid: LOx

$$T_{\infty} = 120 \text{ K}, p_{\infty} = 10^3 \text{ Pa}$$

Superheat: 58.7 K

$$\text{Nucleation radius: } R_{\text{crit}} = 0.012 \mu\text{m}$$

- Merging radius:

$$R_f = 10 \times R_{\text{crit}} = 0.12 \mu\text{m}$$

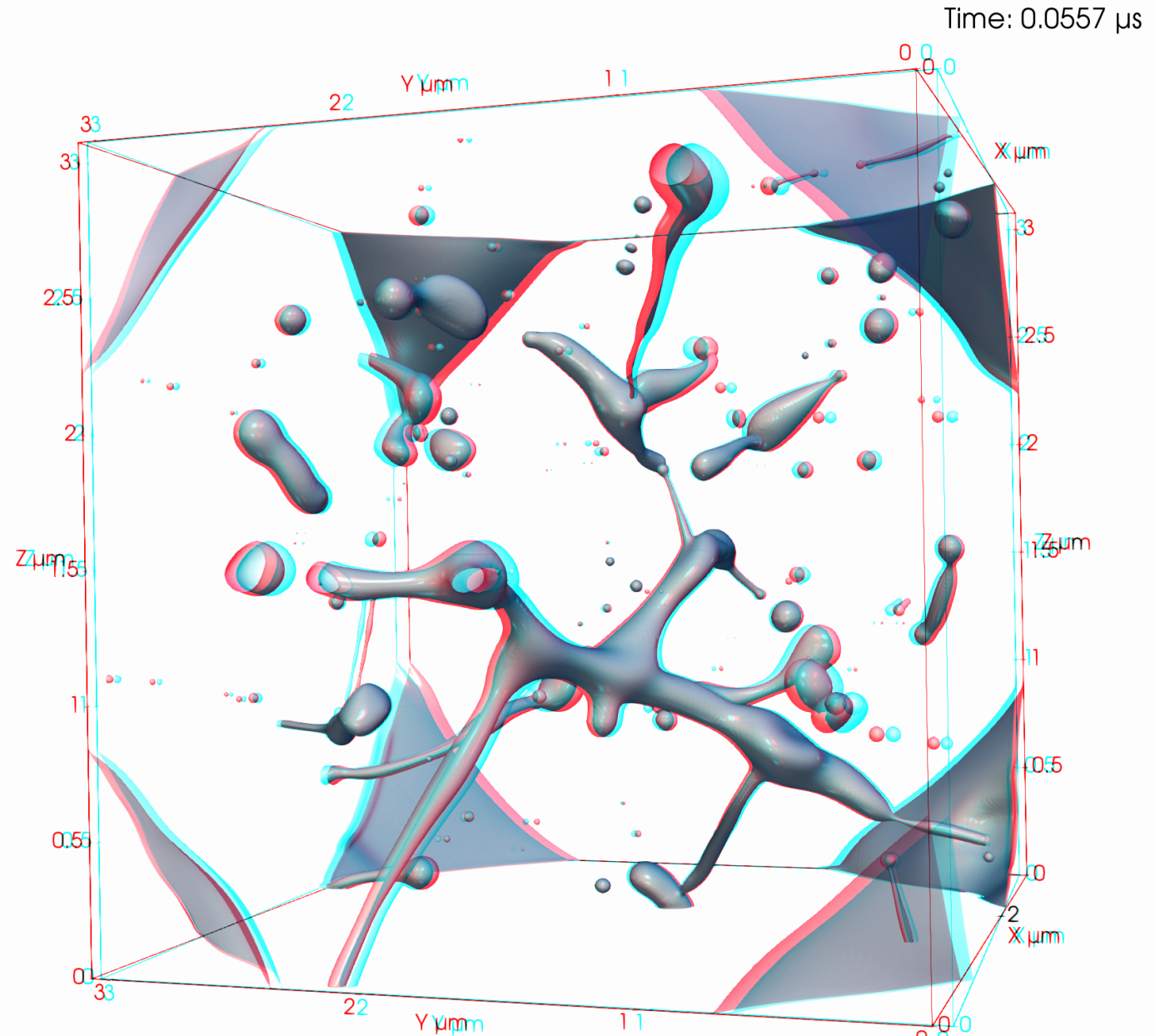
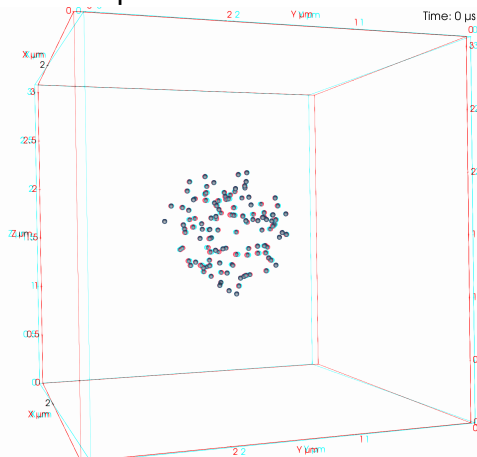
$$\text{We}_b = 8.4, \text{Oh}_b = 0.07$$

- Mesh:

$512^3$  cells

$$\Delta x = R_f/20 = 6 \times 10^{-9} \text{ m}$$

- Initial setup:



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- Merging radius:

$$R_f = 50 \times R_{\text{crit}} = 0.6 \mu\text{m}$$

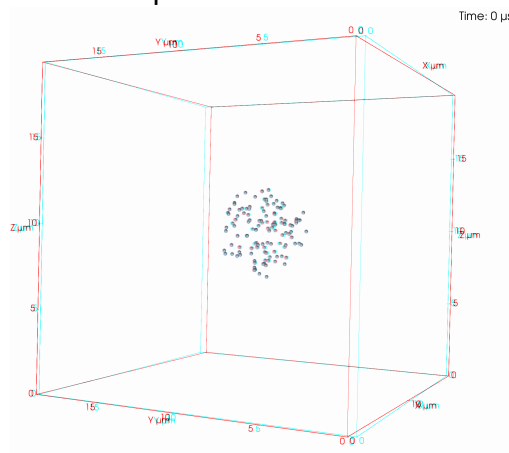
$$\text{We}_b = 33, \text{Oh}_b = 0.03$$

- Mesh:

$$1024^3 \text{ cells}$$

$$\Delta x = R_f / 31 = 1.9 \times 10^{-8} \text{ m}$$

- Initial setup:



Time: 0.161  $\mu\text{s}$

