

## VISUALIZATION OF CARBON ALLOTROPES

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Carbon takes many different forms and has a fantastic range of properties. As well as graphite/diamond, a hexagonal diamond called lonsdaleite, and amorphous carbons of sp<sup>2</sup>, sp<sup>3</sup> and mixed natures there are all the fullerenes, graphene, nanotubes etc. Fortunately, different electronic structures take distinct geometrical forms, thus enabling us to differentiate between them. Deducing the geometry of a sample that has been simulated is a crucial step towards understanding its properties. Visualization is essential for understanding sample geometries.

AViz [1] is an Atomistic Visualization package developed at the Technion that can be freely downloaded and installed[2]. I will present examples of still and animated AViz implementations for viewing data from our atomistic simulations of carbon allotropes. The visualization of the data enables understanding of the simulation results and when compared with laboratory experiments and theoretical models provides insight into nanodiamond growth, gas flow in nanotubes, nanotube vibrations and other topics of current research interest. I thank A. Sorkin, R. Kalish, E. Warszawski, A. Hoffman, A. Silverman, T. Mutat, M. Sheintuch, P. Pine, Y. Yaish and P. Bavli for collaborations.

[1] J. Adler, Computers in Science and Engineering, **5**, 61 (2003).

[2] <http://phycomp.technion.ac.il/~aviz>