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## Mechanical Stress due to Adsorption of Benzene in Carbon Pore Towards an Understanding of Atmospheric Soot

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Atmospheric soot is a major air pollutant and a powerful warming agent. Nanoparticles comprising soot are branched fractal aggregates of near-spherical carbon monomers with a diameter of 10-40 nanometers. When exposed to condensable vapors, either at the combustion source or in the atmosphere, soot aggregates undergo morphological transformations, such as collapsing into globules[1-3]. The compaction of atmospheric soot can significantly alter its impacts on health and climate. This work mainly focuses on the solvation force due to condensate present on the soot aggregate.

The solvation forces depend on the properties of both condensate and solid surface. Individual soot monomers

On a nanoscale, the condensed liquid meniscus in the junction between monomers acts like a filled pore, c

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