



A toy model mimicking cage effect, structural fluctuations, and kinetic constraints in supercooled liquids

Submitted by Victor Teboul on Fri, 11/28/2014 - 11:31

Titre	A toy model mimicking cage effect, structural fluctuations, and kinetic constraints in supercooled liquids
Type de publication	Article de revue
Auteur	Teboul, Victor [1]
Pays	Etats-Unis
Editeur	American Institute of Physics
Type	Article scientifique dans une revue à comité de lecture
Année	2014
Langue	Anglais
Pagination	194501
Volume	141
Titre de la revue	Journal of Chemical Physics
ISSN	0021-9606
Mots-clés	cage effect [2], toy model [3]
Résumé en anglais	<p>In this work, we implement new toy models coined to reproduce the cage effect with variants including structural fluctuations and different kinetic constraints. We introduce structural fluctuations in the models from a distribution of the cages opening probabilities and a kinetic constraint from a variation of that probability with the local number of molecules involved in the creation of the cage. We model separately the caging mean field experienced by each molecule, and the cooperative mechanism with the kinetic constraint condition. We find that strong dynamic heterogeneities are present in the models with kinetic constraints. We find that the heterogeneities do not depend on the cage escaping probabilities, while the heterogeneities increase sharply with the strengthening of the kinetic constraint conditions.</p>
URL de la notice	http://okina.univ-angers.fr/publications/ua5596 [4]
DOI	10.1063/1.4901424 [5]
Lien vers le document	http://dx.doi.org/10.1063/1.4901424 [5]

Liens

[1] <http://okina.univ-angers.fr/v.teboul/publications>

[2] [http://okina.univ-angers.fr/publications?f\[keyword\]=10264](http://okina.univ-angers.fr/publications?f[keyword]=10264)

[3] [http://okina.univ-angers.fr/publications?f\[keyword\]=10265](http://okina.univ-angers.fr/publications?f[keyword]=10265)

[4] <http://okina.univ-angers.fr/publications/ua5596>

[5] <http://dx.doi.org/10.1063/1.4901424>

