

The Cloud Computational Environment – Application to Nuclear Structure Theory

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The utility of the cloud computational model [1] for studies in the field of the microscopic nuclear structure theory is addressed. In particular, a class of theoretical many-body approaches which could benefit from this technology is delineated. Using the OpenStack API [2] (compatible with the Amazon EC2 API [3]) a system for automatic launching of computational nodes is presented and a sample computation is performed. The economics aspect of the cloud approach to large-scale computations for is briefly touched.

Alongside that, a nuclear theory aggregation software platform [4] for presenting results of calculations from various models is discussed.

References

- [1] M. Armbrust *et al*, *Commun. ACM* No.53, 4 (2010) p.50–58.
- [2] <http://api.openstack.org/>
- [3] <http://aws.amazon.com/developertools/351>
- [4] <http://www.nuclearmodels.net>