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Effect of cutoff radius, long range interaction and temperature controller on thermodynamic properties of fluids: Methanol as an example

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**\*Highlights (for review)**

- Molecular dynamics show that using PME long-range interaction is better than using Coulomb cutoff long-range interaction.
- The minimum cutoff radius one should use for Coulomb cutoff is 1.3 nm while for PME is 1.25nm
- Molecular dynamics show that the best temperature controller is the Nose-Hoover thermostat.

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