

# On the theoretical determination of the static dipole polarizability of intermediate size silicon clusters

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The static electric dipole polarizability of small Si clusters was investigated. The methods used were based on different techniques to calculate the polarizability. Thus, some methods used the higher-order finite-difference pseudopotential, while others have employed an all-electron approach. The results show that B3PW91 combined with pseudo-potential and a suitable basis set was a very powerful method to reproduce the polarizabilities of  $\text{Si}_n$  clusters with size range  $n=1-8$ .