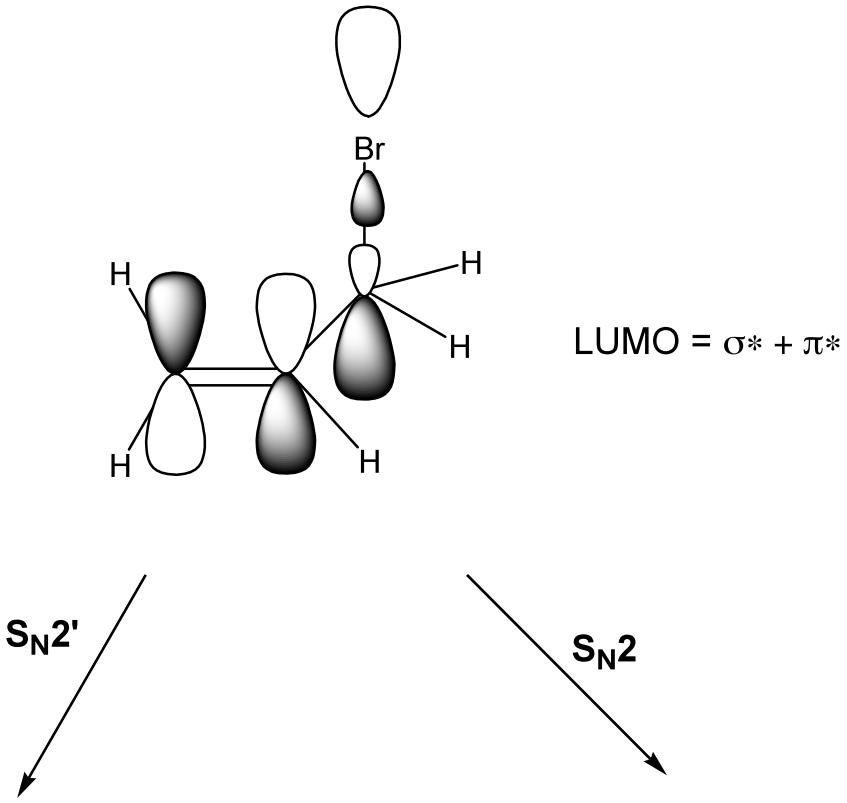
Allylic Substitution – S_N2' Mechanism

Allylic halides undergo the S_N2 reaction faster than the corresponding saturated halides as the allylic C-X bond is about 50 kJ/mol weaker. They can also react through an S_N1 mechanism in polar solvents, since the allylic cation is resonance stabilised (see McMurry, 5th Ed., pp 406-408). However, in non-polar solvents, and in situations where the S_N2 reaction cannot occur because of steric hinderance, another mechanism can operate: S_N2'



In many case (but not all) the nucleophile enters *syn* (i.e. on the same side) to the leaving group in the S_N2' reactions – the reason for this is not well understood. For example: