

# Pendular state spectroscopy of molecular ions in Helium nanodroplets

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Molecular alignment methods have always been of interest in order to obtain information about structure and bond orientation. The pendular state orientation method can achieve substantial orientation of molecules in an experimentally simple way [1], [2]. Modest electric fields must be applied to achieve this orientation. However, the magnitude of the applied field relies on cooling since the field must overcome the molecule's tendency to rotate freely. Using superfluid helium as a medium leads to lower rotational temperatures, further facilitating the molecular alignment. Even though this method has been formerly

used for neutral molecules [3], [4], no studies on molecular ions have been done previously. This contribution covers the first results obtained using this technique.

## References

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- [3] F. Dong *et al.* 2002 *Science* **298**:5596 1227-30
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