peri-Interactions in Naphthalenes, 10 [1]. In Search of Independent Criteria for N→P Bonding: Protonation Studies on (8-Diethylamino-naphth-1-yl)-diphenyl-phosphine

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Enhancement of the basicity of the amino group in (8-dialkylamino-naphth-1-yl)-diphenyl-phosphines diverts protonation from the P to the N atom. Thus the cation $8\text{Et}_2\text{N}^+\text{(H)}\text{C}_{10}\text{H}_6\text{PPh}_2$ becomes available whose $^1\text{H}$ and $^{31}\text{P}$ NMR spectra provide arguments against dative N→P interactions in the phosphines and their quaternary phosphonium salts. Likewise, the X-ray structure of $8\text{Et}_2\text{N}\text{C}_{10}\text{H}_6\text{PPh}_2$ does not indicate such interactions.

Key words: N→P Bonding, NMR Protonation Shifts, $d(\text{N}⋯\text{P})$ Distances