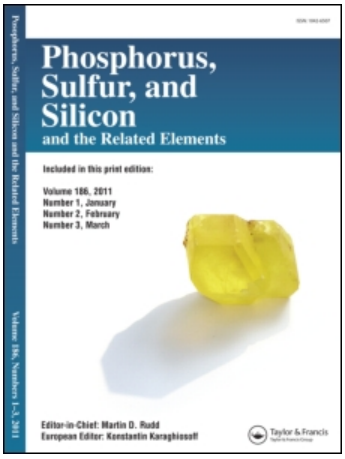

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$^3J(P,C)$ Couplings in 3-Phosphabicyclo[3.1.0]Hexane 3-Oxides

L. Töke[a]; Gy. Keglevich[a]; A. Kovács[a]
[a] Department of Organic Chemical Technology, Technical University of Budapest, Budapest, HUNGARY

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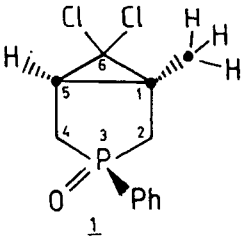
$^3J(P,C)$ COUPLINGS IN 3-PHOSPHABICYCLO[3.1.0]HEXANE 3-OXIDES

L. TŐKE, GY. KEGLEVICH, A. KOVÁCS
Department of Organic Chemical Technology, Technical University of Budapest, 1521 Budapest, HUNGARY

Vicinal phosphorus-carbon couplings ($^3J(P,C)$) measured for 3-phosphabicyclo[3.1.0]hexane 3-oxides (1 and 2) of known geometry have been studied. With one exception (see below), the dependence of the $^3J(P,C)$ constants on the torsion angles (Ø) followed the Karplus-equation ($^3J(P,C)=A\cos^2Ø+B\cos Ø+C$).



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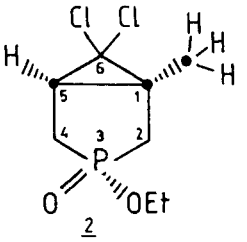

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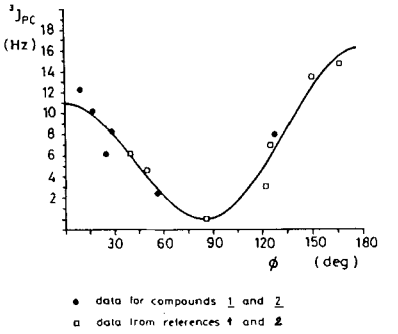

On C_6 coupled through two vicinal paths by the phosphorus atom, extremely large constants (ca. 12 Hz) have been observed in 1 and 2 (Ø~77°). According to our explanation, "through space" coupling is responsible for the extraordinary large splitting.

The 176°-12.7 Hz and 111°- 0 Hz data pairs obtained for 8-chloro-5,6-di(methoxycarbonyl)-4,7-dimethyl-2-ethoxy-2-phosphabicyclo-[2.2.2]octa-5,7-diene 2-oxide also fit the Karplus curve.

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REFERENCES

1: G. Adiwidja, B. Meyer and J. Thiem: Z. Naturforsch., 34, 1547 (1979).

2. L.D. Quin, M.T. Gallagher, G.T. Cuncle and D.B. Chesnut: J. Am. Chem. Soc., 102, 3136 (1980).