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D. Cremer and E. Kraka	**A Description of the Chemical Bond in Terms of Local Properties of Electron Density and Energy** Salient features of chemical bonding are considered in terms of the saddle points r_p of the one-electron density $\varrho(\mathbf{r})$ in the regions between the bonded nuclei and local energy density $H(r_\mathrm{p}) = G(r_\mathrm{p}) + V(r_\mathrm{p})$. Information about the concentration and depletion of electronic charge at r_p is stored in $\nabla^2\varrho_\mathrm{p}$. It was found, however, that the $\nabla^2\varrho_\mathrm{p}$ criterion does not suffice for detecting weak covalent bonds.	1259—1281
W. L. Luken	**Properties of the Fermi Hole in Molecules** The shape of the Fermi hole in molecules is discussed. If the wavefunction is given in the form of a single Slater determinant, the Fermi hole is determined by a square of the Fermi orbital. A set of Fermi orbitals can be used to transform a set of canonical SCF MOs into localized MOs.	1283—1294

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Model Description of Some Molecular Properties by the Modified-Atom-in-a-Molecule (MAM) Approach

Conclusive evidence is presented which shows that the concept of modified atoms in a molecule (MAM) is a viable model for the description of numerous molecular properties. Modification of an atom in a chemical environment can be decomposed into isotropic and anisotropic components. Isotropic (monopole) part is responsible for the changes of σ_A^d, χ^d and ESCA shifts. Extramolecular electrostatic potentials require inclusion of higher (anisotropic) local multipoles. Special attention is devoted to the description of atomic anisotropy by hybrid AOs. The latter explain various relationships existing between directional features and properties which can be termed as »local«. It is argued that atomic monopoles and hybridization indices represent pseudo-observables *par excellence*. . . . . . . 1295—1353

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