

## dual substituent-parameter equation

In a general sense, any equation which expresses substituent effects in terms of two parameters. However, in practice the term is used more specifically for an equation for summarizing the effects of *meta*- or *para*- substituents ( $i = m$  or  $p$ ) **X** on chemical reactivity, spectroscopic properties, etc. of a probe site **Y** in benzene or other aromatic system.

$$P^i = \rho_I^i \sigma_I + \rho_R^i \sigma_R$$

$P$  is the magnitude of the property **Y** for substituent **X**, expressed relative to the property for  $X = H$ ;  $\sigma_I$  and  $\sigma_R$  are inductive or polar and resonance substituent constants, respectively, there being various scales for  $\sigma_R$ ;  $\rho_I$  and  $\rho_R$  are the corresponding regression coefficients.

**See also:** extended Hammett equation

**Source:**

PAC, 1994, 66, 1077 (*Glossary of terms used in physical organic chemistry (IUPAC Recommendations 1994)*) on page 1107