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Title A generalization of the Cauchy-Riemann equations

The manifolds of constant rank defined by smooth equations

$$
(1) \qquad \begin{array}{c} F_1(x_1, x_2, \ldots, x_p; t_1, t_2, \ldots, t_q) = 0 \\ \cdots\cdots\cdots\cdots\cdots\cdots \\ F_n(x_1, x_2, \ldots, x_p; t_1, t_2, \ldots, t_q) = 0 \end{array}
$$

involving parameters $t_1, t_2, \ldots, t_q$ are more general than the manifolds defined by atlases of maps. For such manifolds tangential derivatives exist for functions $u = u(x_1, \ldots, x_p; t_1, \ldots, t_q)$ which satisfy the equations

$$
(2) \qquad \frac{\partial u}{\partial t_\alpha} = \sum_{\nu=1}^{n} \rho_\nu \frac{\partial F_\nu}{\partial t_\alpha} \quad , \alpha = 1, \ldots, q .
$$

As an example let (1) be the complex plane $x_1 - t_1 - i t_2 = 0$ In this case the equations (2) turn into the Cauchy-Riemann equations.

For the functions satisfying (2) a generalized Cauchy integral formula holds.