MR1232143 (95f:58007) 58A15 58G99

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A geometric approach to an equation of J. D'Alembert. (English summary)
Proc. Amer. Math. Soc. **123** (1995), *no. 5,* 1597–1606.

The space V_1 of smooth functions f on $\mathbf{R}^2$ satisfying the partial differential equation $\partial^2 \log f / \partial x \partial y = 0$ contains the space V_2 of functions f on $\mathbf{R}^2$ which can be written $f(x,y) = h(x) \cdot g(y)$, with $(x,y) \in \mathbf{R}^2$. The authors prove that $V_1 \neq V_2$ by considering an appropriate exterior differential system. They show that this differential system admits 2-dimensional integral manifolds which do not arise from elements of V_2.

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Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.