irrotational field

Canonical name	IrrotationalField
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Entry type	Definition
Classification	msc 26B12
Synonym	irrotational vector field
Synonym	curl free field
Synonym	curl-free vector field
Related topic	Curl
Related topic	LaminarField

Suppose Ω is an open set in $\mathbb{R}^3$, and $\mathbf{V}$ is a vector field with differentiable real (or possibly complex) valued component functions. If $\nabla \times \mathbf{V} = 0$, then $\mathbf{V}$ is called an **irrotional vector field**, or **curl free field**.

If $\mathbf{U}$ and $\mathbf{V}$ are irrotational, then $\mathbf{U} \times \mathbf{V}$ is solenoidal.