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Around the Thom-Sebastiani theorem

For germs of holomorphic functions $f : \mathbf{C}^{m+1} \to \mathbf{C}$, $g : \mathbf{C}^{m+1} \to \mathbf{C}$ having an isolated critical point at 0 with value 0, the classical Thom-Sebastiani theorem describes the vanishing cycles group $\Psi^{m+n+1}(f \oplus g)$ (and its monodromy) as a tensor product $\Psi^m(f) \otimes \Psi^n(g)$, where $(f \oplus g)(xy) = f(x) + g(y)$, $x = (x_0, \ldots, x_m)$, $y = (y_0, \ldots, y_n)$. I will discuss algebraic variants and generalizations of this result over fields of any characteristic, where the tensor product is replaced by a certain local convolution product, as suggested by Deligne. The main theorem is a Künneth formula for $R\Psi$ in the framework of Deligne's theory of nearby cycles over general bases.