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"Ext" suggests extensions, and it was in this context that $\mathrm{Ext}^1$ was first defined. We shall discuss this in Section 4, where it will arise quite naturally in context.

Another possible interpretation of Ext is pertaining to some sort of duality, since it reflects the properties of passing from an $\mathcal{O}$-module $M$ to the "dual" $\mathcal{O}$-module $\mathrm{Hom}_{\mathcal{O}}(M, \cdot)$. This will be made precise in the next section, where, in particular, the local duality theorem will be put in intrinsic form.

Thus Ext has two quite different faces, each interesting in its own right.

## The Koszul Complex and Applications

Koszul Complex. We continue using the notation $\mathcal{O}$ for the local ring of germs of analytic functions defined in some nbd of the origin in $\mathbb{C}^n$. Suppose $f_1 \cdots f_r \in \mathcal{O}$; denoted by $I_k = \{f_1 \cdots f_k\}$ the ideal generated by the first $k$ functions, and set $I = I_r$.

Definition. $(f_1 \cdots f_r)$ is a regular sequence if $f_k$ is not a zero divisor in $\mathcal{O}/I_{k-1}$ for $k = 1, \cdots r$.

We recall that the geometric interpretation, mentioned above and proved in the case $n=2$, that is equivalent to $\mathrm{codim}\, V_k = k$, where $V_k = \{f_1(z) = \ \ = f_k(z) = 0\}$.