



Assembling a resolution:

$$M \rightarrow T(Q_*) = \bigoplus_{p \geq 0} S^{-p} Q_{-p}$$

Q_* has internal diff $d_I: Q_{-p} \rightarrow Q_{-p}$
 external diff $d_E: Q_{-p} \rightarrow Q_{-p-1}$

$T(Q_*)$ has total diff $d_T = d_I + d_E$

where: $d_I S^{-p} = (-1)^p S^{-p} d_I$

$$d_E S^{-p} = S^{-p-1} d_E$$

Main facts:

- a) $M \rightarrow T(Q_*)$ is a homology isom
- b) $T(Q_*)$ is a Cartan construction

Notation: $M \rightarrow E(M) = T(Q_*)$