

# Eine Woche, ein Beispiel

## 10.6 Chow group notation

Ref:

Murre, Jacob P., Jan Nagel and Chris A. M. Peters. Lectures on the Theory of Pure Motives. Univ. Lect. Ser. Providence, RI: American Mathematical Society (AMS), 2013.

sheaf version of Chow group:

<https://math.stackexchange.com/questions/3019937/chow-groups-with-coefficients-in-a-local-system>

Setting:  $X$ : sm proj variety over  $k$

$$\underbrace{\text{Pic } X \supset \text{Pic}^{\tau} X \supset \text{Pic}^0 X \supset 0}_{\substack{N^1(X) \\ NS(X)}}$$

$i=1$ :

$$\begin{array}{c} \text{Div}(X) \quad Z^i(X) \xrightarrow{\quad \cdot \quad} \text{Pic}(X) \quad CH^i(X) \\ \cup \\ \text{Div}^{\tau}(X) = \text{Div}_{\text{num}}(X) \quad Z_{\text{num}}^i(X) \xrightarrow{\quad \cdot \quad} \text{Pic}^{\tau}(X) \quad CH_{\text{num}}^i(X) \quad \begin{array}{l} N'(X) \quad N_{\text{m}}^i(X) \end{array} \\ \parallel \quad \cup \\ \text{Div}_{\text{hom}}(X) \quad Z_{\text{hom}}^i(X) \xrightarrow{\quad \cdot \quad} \text{Pic}^{\tau}(X) \quad CH_{\text{hom}}^i(X) \\ \cup \\ \text{Div}_{\text{alg}}(X) \quad Z_{\text{alg}}^i(X) \xrightarrow{\quad \cdot \quad} \text{Pic}^0(X) \quad CH_{\text{alg}}^i(X) \quad NS(X) \\ \cup \\ Z_{\text{rat}}^i(X) \end{array}$$