List of errata

1) p.1, section 1.1, line 2: "irreducible" should be replaced by "k-irreducible", where k is a field over which X is defined.

2) p. 45: in the boxed formula above Prop. 4.3.3 H^{even} and $H^{\text{odd}}(M)$ should be replaced by $H^{\text{even}}(X)$ and $H^{\text{odd}}(X)$. A similar formula holds for $H^{\text{even}}(M)$ and $H^{\text{odd}}(M)$.

3) p. 70: The last sentence of the statement of Thm. 6.2.1 (iii) should read "More precisely, $p_{2d-1}(X)$ acts as the identity on $H^{2d-1}(X)$ and on the Albanese variety Alb_X, *and moreover the kernel of* $p_{2d-1}(X)$ *equals the Albanese kernel* $T(X)_{\mathbb{Q}}$". The proof is given on p. 75; see also [**Mur90**, 4.1 Thm. 2 ii)].

4) p. 77: At the end of Thm. 6.2.12 it is stated that a similar result holds for the Albanese motive. We would like to clarify the precise relation between the Albanese motive $\text{ch}^{2d-1}(X)$ and the motive $M(A_X)$ that corresponds to the isogeny class of the Albanese variety $A_X = \text{Alb}(X)$ by Theorem 2.7.2 (X is a smooth projective variety of dimension d). Let P_X be the Picard motive of X. In the proof of Thm. 6.2.12 we saw that the motive $M(P_X)$ equals $(C, \pi, 0)$ where C is the linear section of X used in the construction of the Picard motive $\text{ch}^1(X)$ and π is the projector corresponding to the homomorphism (see page 78)

$$p = \frac{1}{m}\text{pic}(i) \circ \beta \circ \text{alb}(i) : J(C) \to J(C)$$

which is a projector on $J(C)$. Since A_X corresponds to the same projector p (note that the transpose of p equals p) we have $M(A_X) = M(P_X) = (C, \pi, 0)$. (This is in agreement with the fact that P_X and A_X are isogenous !) Since $M(P_X) \simeq \text{ch}^1(X)$ and since the correspondence $\frac{1}{m} i_* i^*$ induces an isomorphism between $\text{ch}^1(X)$ and $\text{ch}^{2d-1}(X)(d-1)$ whose inverse is the isomorphism given by the correspondence $D(\beta)$, we obtain

$$M(A_X) \simeq \text{ch}^{2d-1}(X)(d-1).$$

Note that since the Picard variety $P(A_X)$ of A_X is isomorphic to P_X we also obtain an isomorphism

$$\text{ch}^1(X) \simeq M(P_X) \simeq M(P(A_X)) \simeq \text{ch}^1(A_X).$$

A direct proof of the isomorphism $\mathrm{ch}^1(X) \simeq \mathrm{ch}^1(A_X)$ can be found in [M.D. Kaba, A note on the Picard motive of a variety, Indag. Math. 23 (2012), 377–380].