

# Programmable hash functions

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1. The PHF definition we have seen requires that with "decent" probability,  $a_{m_i} \neq 0$  for  $m_1, \dots, m_w$ , but  $a_{m^*_j} = 0$  for  $m^*_1, \dots, m^*_v$ . Why can't we expect to have  $v$  and  $w$  both be large simultaneously?
2. A programmable hash function (with "sufficient" programmability parameters)... (choose as many options as you think are appropriate)
- (A) ...is an algebraic tool that should help in enabling a security reduction.
  - (B) ...is collision-resistant if the DLog assumption holds in the underlying group.
  - (C) ...by definition requires a pairing.