

2015

BOSTON
EVOLUTIONARY
GENOMICS
SUPERGROUP



Sean Eddy

MCB Harvard

“Sequence homology searches: the future of deciphering the past”



```

mpv = esl_sse_rightshift_ps(P7C_MQ(dpp, Q-1), zerov);
ipv = esl_sse_rightshift_ps(P7C_IQ(dpp, Q-1), zerov);
dpv = esl_sse_rightshift_ps(P7C_DQ(dpp, Q-1), zerov);

/* DP recursion for main states, all but the D->D path */
for (q = 0; q < Q; q++)
{
  /* Calculate M(i,q); hold it in tmp var <sv> */
  sv = _mm_mul_ps(xBv, *tp); tp++; /* B->Mk */
  sv = _mm_add_ps(sv, _mm_mul_ps(mpv, *tp)); tp++; /* Mk-1->Mk */
  sv = _mm_add_ps(sv, _mm_mul_ps(ipv, *tp)); tp++; /* Ik-1->Mk */
  sv = _mm_add_ps(sv, _mm_mul_ps(dpv, *tp)); tp++; /* Dk-1->Dk */
  sv = _mm_mul_ps(sv, *rp); rp++; /* e_Mk(x_i) */
  xEv = _mm_add_ps(xEv, sv); /* Mk->E */

  /* Advance on previous row, picking up M,D,I values. */
  mpv = *dpp++;
  dpv = *dpp++;
  ipv = *dpp++;

  /* Delayed store of M,D */
  P7C_MQ(dpc, q) = sv;
  P7C_DQ(dpc, q) = dcv;

  /* Partial calculation of *next* D(i,q+1); M->D only; delay storage, hold in dcv */
  dcv = _mm_mul_ps(sv, *tp); tp++;

  /* Calculate and store I(i,q) */
  sv = _mm_mul_ps(mpv, *tp); tp++;
  P7C_IQ(dpc, q) = _mm_add_ps(sv, _mm_mul_ps(ipv, *tp)); tp++;
}

```



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