```
1: function LinearPartition(\mathbf{x})
       n \leftarrow \text{length of } \mathbf{x}
 2:
       Q \leftarrow \text{hash}()
 3:
                                         \triangleright hash table: from key (i, j) to score
       Q(0,1) \leftarrow 1
                                                                                ▷ axiom
 4:
       for j = 1, ...n do
 5:
                                                                                ⊳ PUSH
           Q(j, j+1) \leftarrow 1
6:
           for each key (i, j) in Q do
7:
              Q(i, i+1) \leftarrow Q(i, j) \cdot e^{-\frac{\delta(\mathbf{x}, j)}{kT}}
                                                                                 ▷ SKIP
8:
              if (x_i, x_i) in {AU, UA, CG, GC, GU, UG} then
9:
10:
                 for each key (k, i) in Q do
                    Q(k, j+1) += Q(k, i) \cdot Q(i, j) \cdot e^{-\frac{\xi(\mathbf{x}, i, j)}{kT}}
                                                                                  ⊳ POP
11:
           BeamPrune(Q, j + 1, beamsize)
12:
       return Q(0, n+1)
13:
```