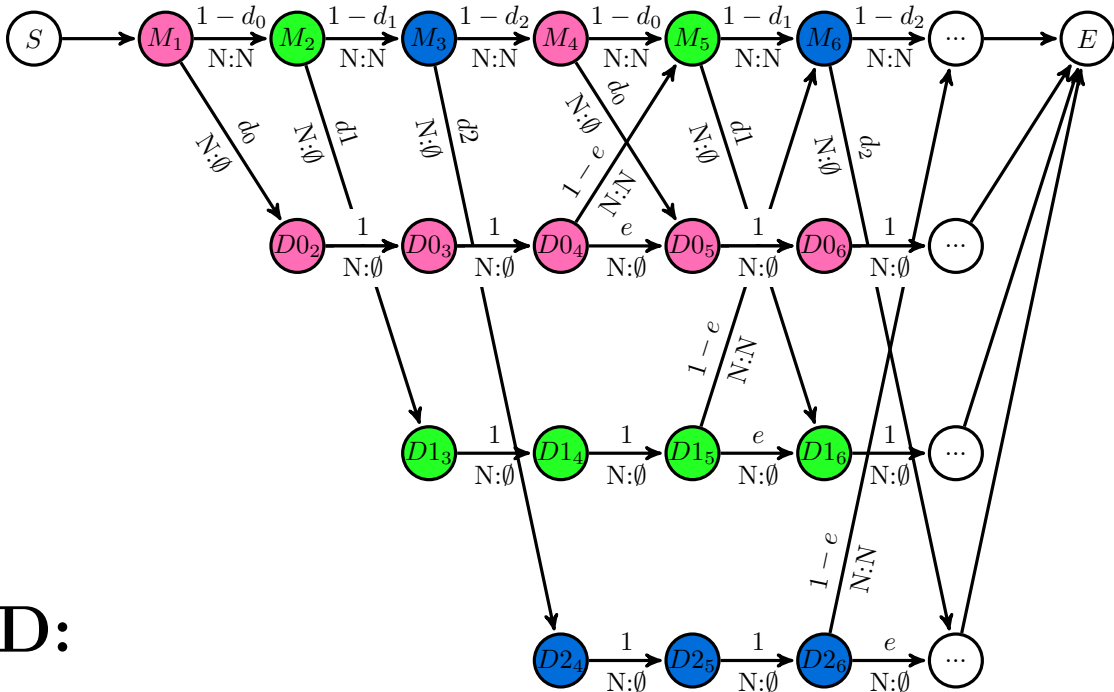


D:



S: Start

M_1 : match state 1

M_2 : match state 2

M_3 : match state 3

$D0_i$: phase-0 deletion of state i

$D1_i$: phase-1 deletion of state i

$D2_i$: phase-2 deletion of state i

... : continuing states

E: End

d_0 : phase-0 deletion opening weight

d_1 : phase-1 deletion opening weight

d_2 : phase-2 deletion opening weight

e : deletion extension weight in the unit of codon

N:∅: one nucleotide deletion

N:N: nucleotide to nucleotide match