Algorithm PSO_Motif_Plus
fitness(final_consensus) = -infinity;
for i=1 to MAX_RESET do { //loop 1
    Initialize a random solution (current) for each agent
    fitness(pbest) = -infinity for all agents
    fitness(gbest) = -infinity;
    for j=1 to MAX_ITERATION do { //loop 2
        for k=1 to NUM_AGENTS do { //loop 3
            Scan each sequence to find a best match to current_k;
            Use the matches to calculate fitness(current_k);
            if fitness(current_k) > fitness(pbest_k) then
                pbest_k = current_k;
            end if
            if fitness(current_k) > gbest then
                gbest = current_k;
            end if
        end for
        Check Shift;
        Update current for each agent based on the update rule;
        if j > MIN_ITERATION and no update on gbest occurred in past N iterations then
            End Loop 2;
        end if
    end for
    if fitness(gbest) > fitness(final_consensus) then
        final_consensus = gbest;
    end if
end for
Post-processing;

Figure 1: Pseudo-code of our algorithm