```
LCPviaQP[q_, m_] := Module[{x, u, i, t, t2},
  x = Table[u[i], {i, Length[m]}];
  {#[[1]], x /. #[[2]]} & [
    FindMinimum[Prepend[# ≥ 0 & /@ Join[x, m.x + q], x.(m.x + q)], x]]
 ]

(*solves LCP for z.((B+C).z+q *)
(*The Linear Complementarity Problem By Richard W.Cottle,
Jong-Shi Pang,Richard E.Stone, 5.2.1*)
IterativeSplitting[s_, B_, M_, q_, exact_] :=
 Module[{n = Length[q], j, z, t, zalt, c, C = M - B},
  z = Table[0, {i, n}]; c = {};
  For[j = 1, j ≤ s, j++,
   zalt = z;
   z = LCPviaQP[q + C.z, B][[2]];
   AppendTo[c , Norm[exact - z] / Norm[exact]];
  ];
  {z.((B + C).z + q), z, c}
 ]

(* solves z.(z.m+q)=0, z≥0, z.m+q≥0  with
   m_i,i = d, m_i,i-1=l, m_i,i+1 = u*)
PSOR[s_, d_, l_, u_, q_, w_, m_] := Module[{i, n = Length[q], z, j, zalt},
  z = Table[0, {i, n}];
  For[j = 1, j ≤ s, j++,
   zalt = z;

   z[[1]] = Max[0, z[[1]] - w / d (q[[1]] + u z[[2]] + d z[[1]])];
   For[i = 2, i < n, i++,
    z[[i]] = Max[0, z[[i]] - w / d (q[[i]] + l z[[i - 1]] + u z[[i + 1]] + d z[[i]])];
   ];
   z[[n]] = Max[0, z[[n]] - w / d (q[[n]] + l z[[n - 1]] + d z[[n]])];
   Print[Norm[zalt - z] / Norm[z]];
  ];
  {z.(m.z + q), z}
 ]

PSORSplitting[m_, w_] :=
 LowerTriangularize[Normal[m]] + DiagonalMatrix[Diagonal[m]] (1 / w - 1)
```