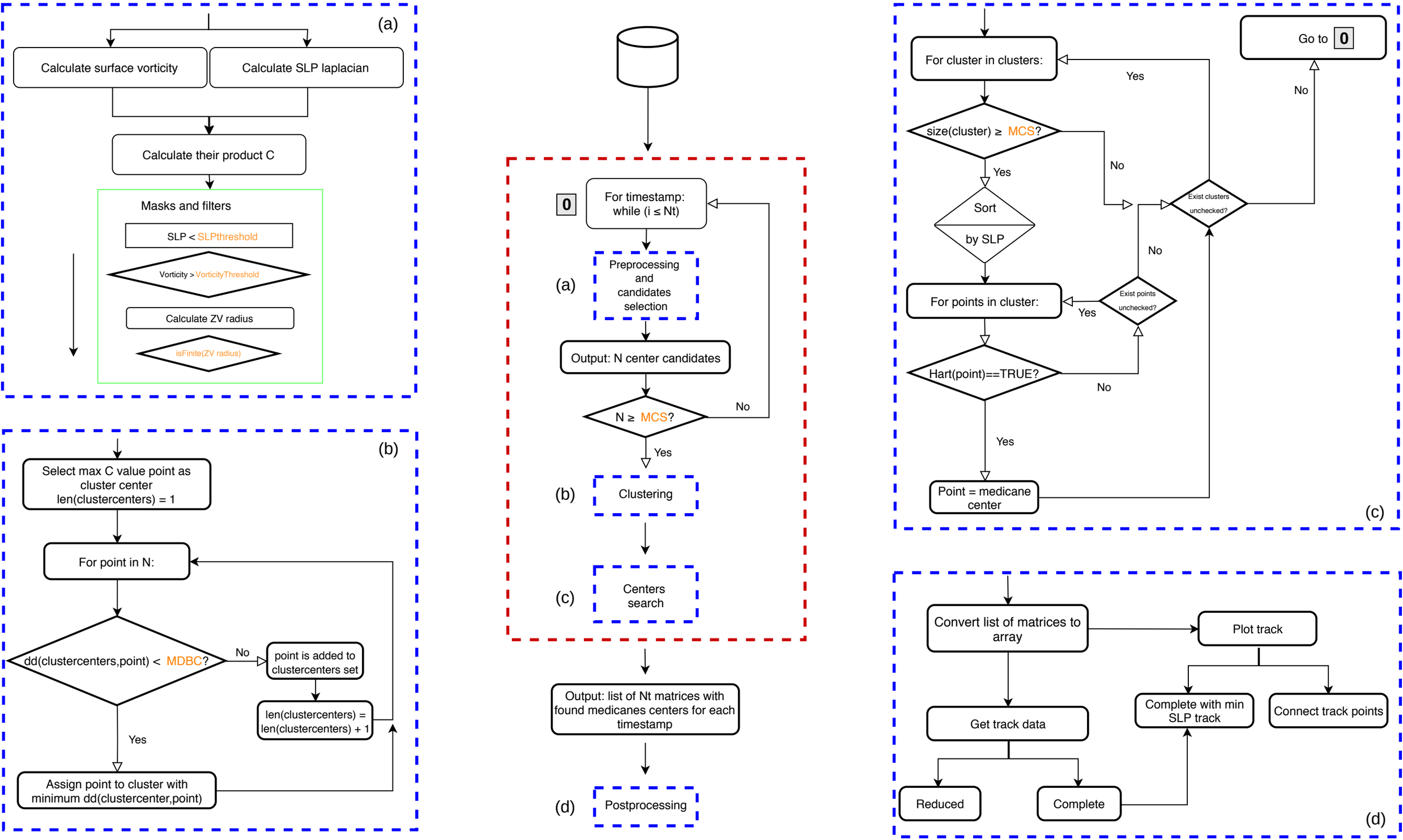
(a)
Calculate surface vorticity
Calculate SLP laplacian
Calculate their product C
Masks and filters
SLP < SLPthreshold
Vorticity > VorticityThreshold
Calculate ZV radius
isFinite(ZV radius)
(b)
Select max C value point as cluster center
len(clustercenters) = 1
For point in N:
dd(clustercenters,point) < MDBC?
No
point is added to clustercenters set
len(clustercenters) = len(clustercenters) + 1
Yes
Assign point to cluster with minimum dd(clustercenter,point)
0
For timestamp: while (i ≤ Nt)
(a)
Preprocessing and candidates selection
Output: N center candidates
N ≥ MCS?
No
Yes
(b)
Clustering
(c)
Centers search
Output: list of Nt matrices with found medicanes centers for each timestamp
(d)
Postprocessing
For cluster in clusters:
Go to 0
Yes
No
size(cluster) ≥ MCS?
No
Yes
Sort by SLP
Exist clusters unchecked?
No
For points in cluster:
Yes
Exist points unchecked?
Hart(point)==TRUE?
No
Yes
Point = medicane center
(c)
Convert list of matrices to array
Plot track
Get track data
Complete with min SLP track
Connect track points
Reduced
Complete
(d)