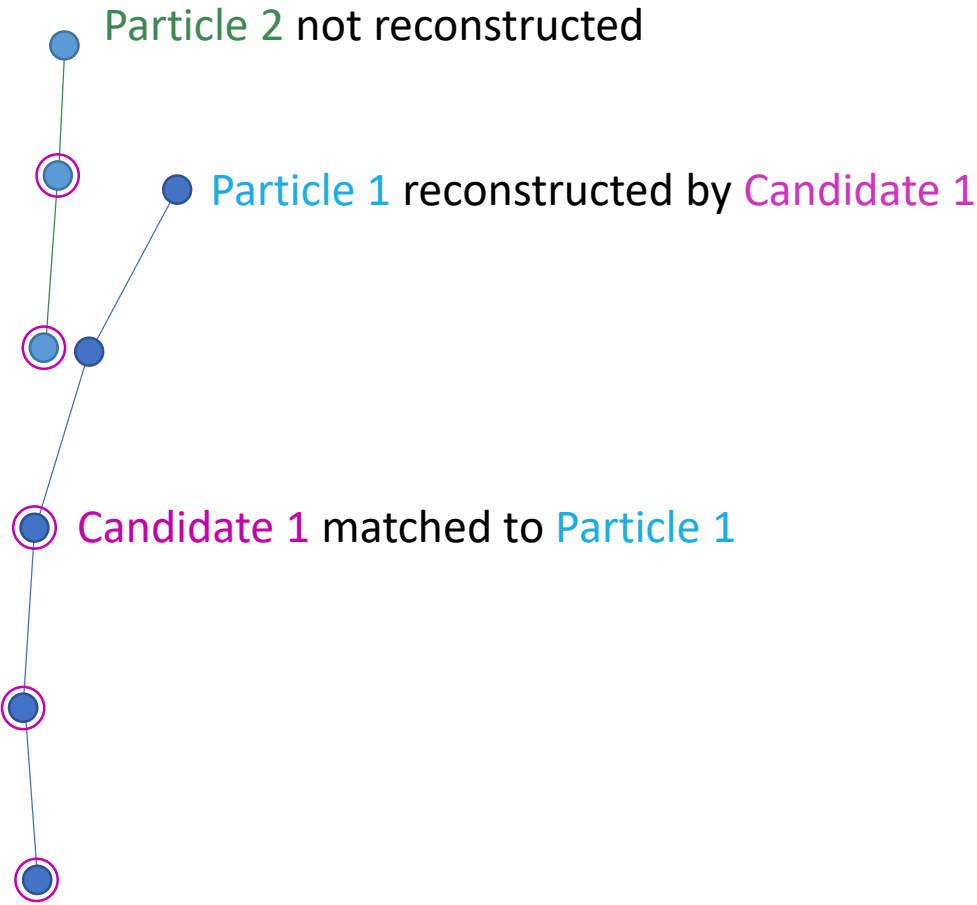


ATLAS Matching

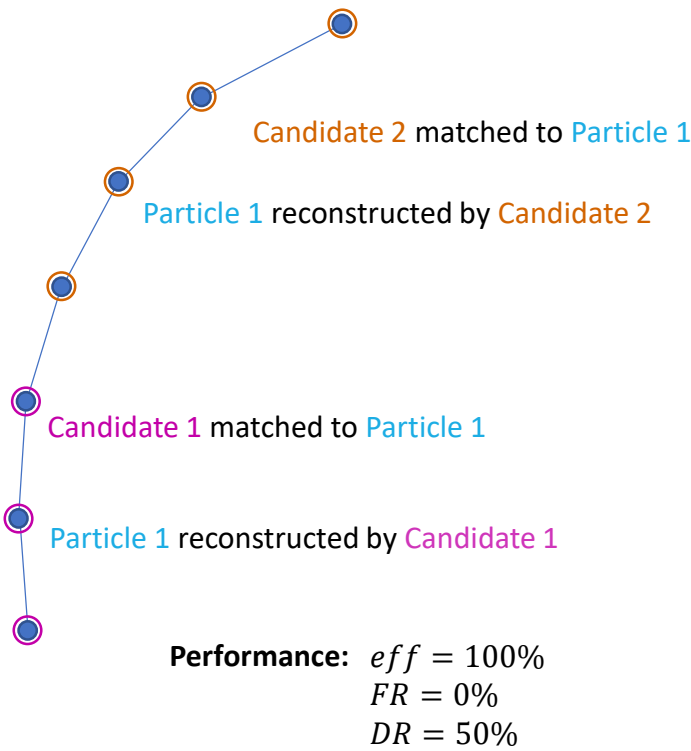
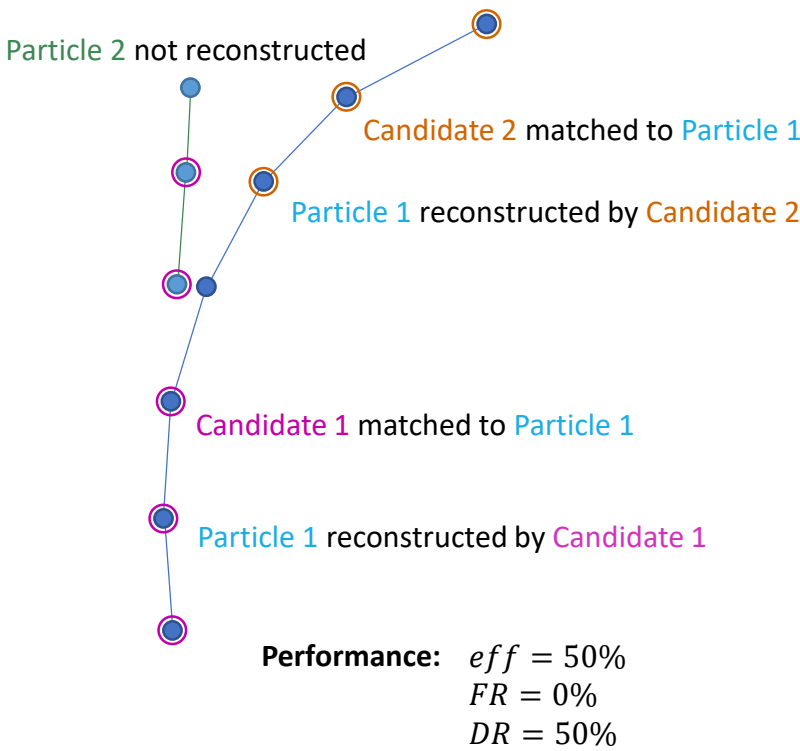
Description: A particle is **reconstructed** if at least one track is matched to it.
A track is **matched** if over MF% of its hits belong to a single particle.

Performance: $eff = 50\%$
 $FR = 0\%$
 $DR = 0\%$

MF%: The given matching fraction
FR: Fake rate = $1 - \text{purity}$
DR: Duplication rate



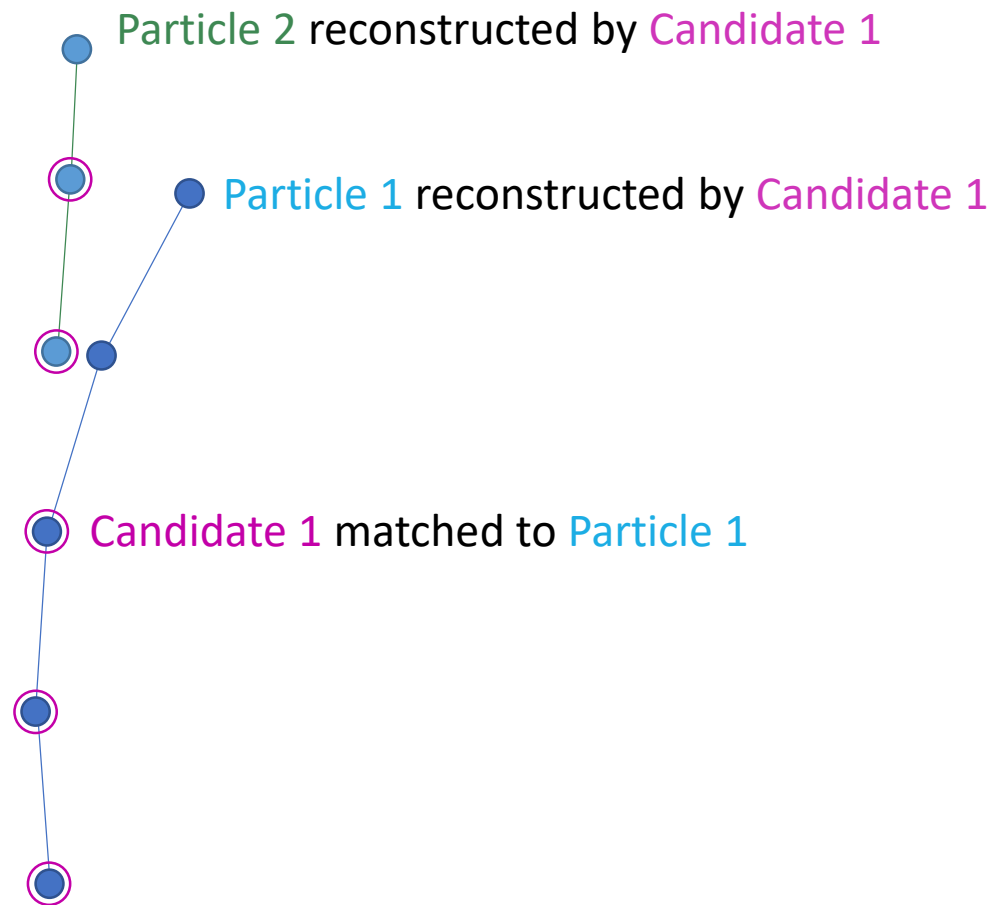
Other examples:



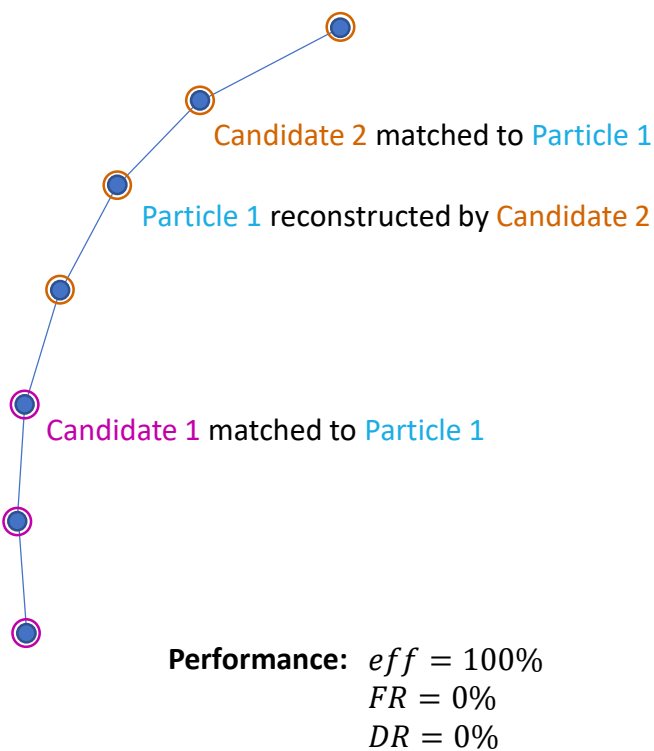
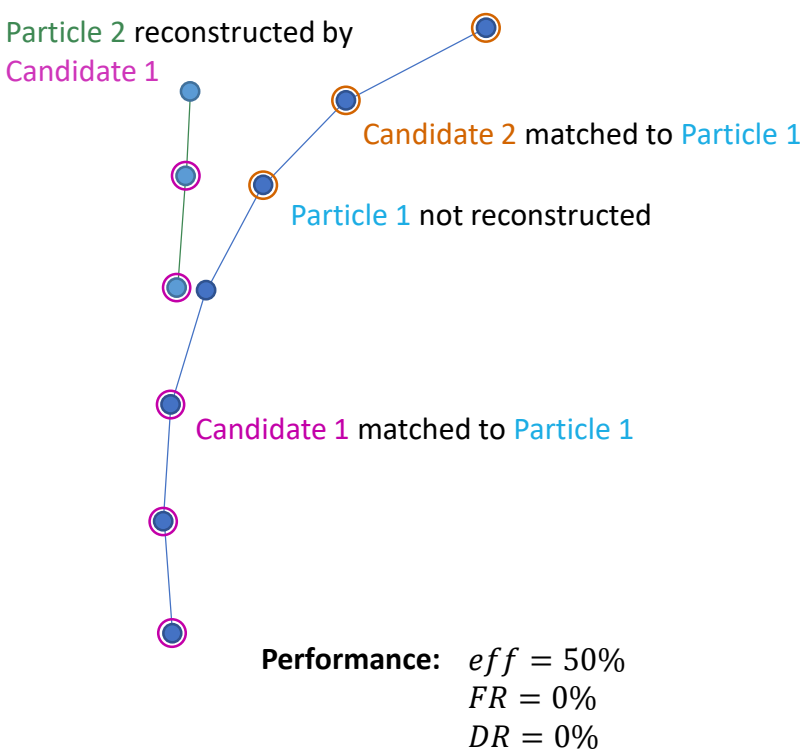
One-Way Matching

Description: A particle is **reconstructed** if over MF% of its hits belong to a single track.
A track is **matched** if over MF% of its hits belong to a single particle.

Performance: $eff = 100\%$
 $FR = 0\%$
 $DR = 0\%$



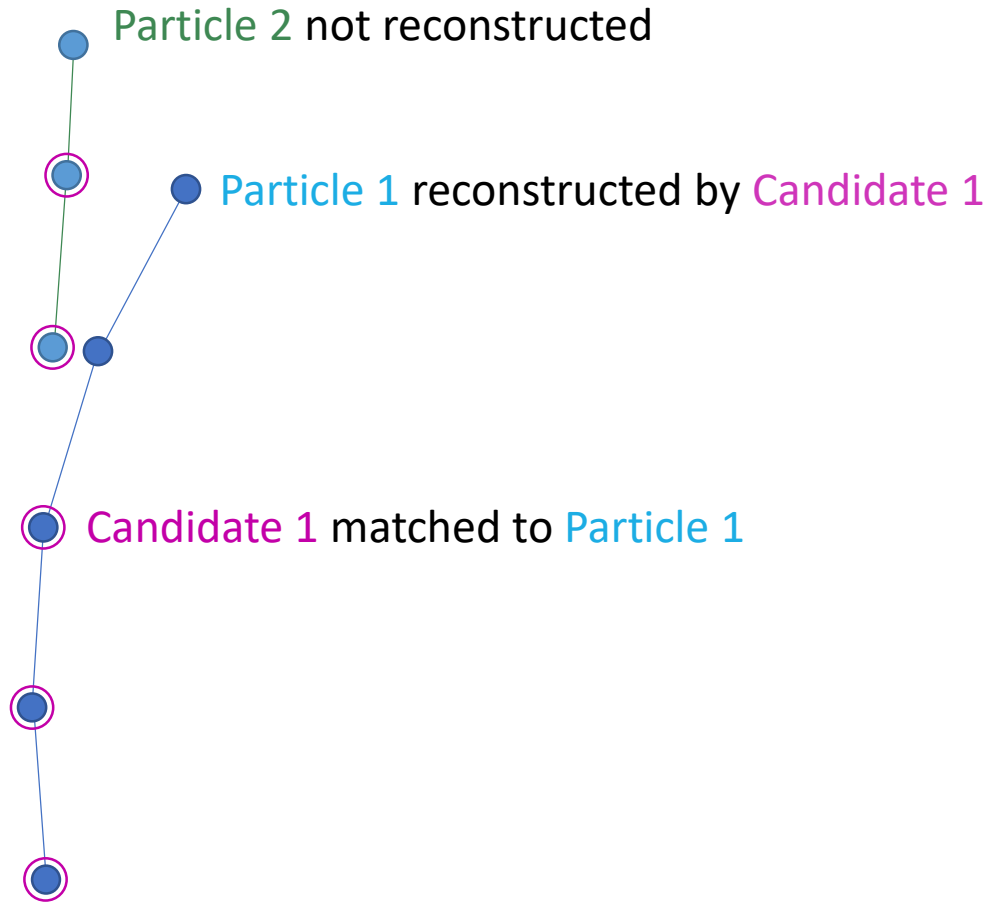
Other examples:



Two-Way Matching

Description: A particle is **reconstructed**, and a track is **matched**, if over MF% of each of their hits are shared by each other.
Therefore, a track is uniquely **matched** to the particle it **reconstructs**.

Performance: $eff = 50\%$
 $FR = 0\%$
 $DR = 0\%$



Other examples:

