The advection of a particle or puff is computed from the average of the three-dimensional velocity vectors at the initial-position \( P(t) \) and the first-guess position \( P'(t+\Delta t) \).

The velocity vectors are linearly interpolated in both space and time.

The first guess position is: \( P'(t+\Delta t) = P(t) + V_{(P,t)} \Delta t \)

The second guess position is: \( P(t) + V_{(P',t+\Delta t)} \Delta t \)

The final position is: \( P(t+\Delta t) = P(t) + 0.5 \left[ V_{(P,t)} + V_{(P',t+\Delta t)} \right] \Delta t \)
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The first guess position is:

\[
P'(t+\Delta t) = P(t) + V(P,t) \Delta t
\]

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\[
P(t) + V(P',t+\Delta t) \Delta t
\]

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