

Smog over Los Angeles, from http://blacklemag.com/technology/science-explains-what-causes-smog/



NOTATION 
$$Fluid Velocity field = \bigcup (X,y,z,t)$$
 velocity of the  
Heroden  $U$  and  $V$  an

• Gavet Force  

$$\begin{array}{c}
 J \\
 \overline{J} \\$$



Poll Everywhere Question: Text your answer to 37607 or at PollEv.com/cimbala. **SP 15, Q30. Given**: A small particle is moving through the air at velocity  $\vec{v}$  as sketched to the right. At the location of the particle, and at a given instant in time, the air velocity is  $\vec{U}$  as also sketched.

To do: Which is the correct direction of the drag force on the particle? Text your answer as "a", "b", or "c", without the quotes.

**(a)** 



ú

Particle

Streamline

 $\left| \vec{v}_{r} = \vec{v} - \vec{v} \right|$ 

Solution:

 $\vec{F}_{\rm drag}$ 

