Subject: Flame velocity in explosion
Posted by shearerm on Wed, 26 Jan 2000 08:00:00 GMT
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I have a scattered array of data that represents the flame arrival
times for given locations during a gas explosion within a 3d volume. I
need to calculate the velocity of the flame. Does anyone one have any
suggestions as to how I might achieve this within IDL.

regards
Murray

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BP Amoco
Exploration
Upstream Technology Group

Subject: Re: Flame velocity in explosion
Posted by wbiagiot on Thu, 27 Jan 2000 08:00:00 GMT
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Lower my home heating oil prices and we'll tell you. ;)

--
"They don't think it be like it is, but it do."

Oscar Gamble, NY Yankees

Subject: Re: Flame velocity in explosion
Posted by shearerm on Fri, 28 Jan 2000 08:00:00 GMT
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Unfortunately I work for exploration, but if you can answer my question
I'll have a word with my colleagues in oil and see what I can do.....

In article <86q055$hk8$1@nnrp1.deja.com>,
  wbiagiot@suffolk.lib.ny.us wrote:
> Lower my home heating oil prices and we'll tell you. ;)
>
> --
> "They don't think it be like it is, but it do."
>
> Oscar Gamble, NY Yankees
>
> Sent via Deja.com http://www.deja.com/
> Before you buy.
>

--
BP Amoco
Exploration
Upstream Technology Group

Subject: Re: Flame velocity in explosion
Posted by wbiagiot on Wed, 02 Feb 2000 08:00:00 GMT
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Lol, Ok Murray.

Well, I'm not sure what your thought process on this is, but here are some of my 1st thoughts and not necessarily related to IDL. Your problem as stated is a calculation of velocity (distance over time, I believe). You've stated that you have the time data and therefore need the distance data to complete the equation. Simplistically, one might assume that the flame starts from a single point in 3d space (XYZ)(spark from an electrode, ie.). Then, you could apply the old D^2 = deltaX^2 + deltaY^2 + deltaZ^2 distance formula on each data pt to calculate a matrix of velocity data. If you want to present some kind of snazzy visual display, draw all of the velocity vectors on a 2D or 3d plot with the color set to a value corresponding to speed. Something like:

color_code = ((velocity_n - min_velocity) / (max_velocity - min_velocity)) * 255

..giving a color code of 0 to 255.

Oh yeah, and set the color table to one of the 40 or so that IDL

supplies. Something like the 3d trackball widget might give some viewing options, but I have never used it. See the IDL demo to see how it works.

Well, I sketched that all out on my bagel plate so I'm sure it's at least 50% incorrect. (The seeds get in the way) Feel free to let me know that I'm all wet.

-Bill B.

--

"They don't think it be like it is, but it do."

Oscar Gamble, NY Yankees
