$ = command line prompt at terminal

> = paraview gui

1. Create xdmf files using the h5kapsel2xdmf.script

    $ ./h5kapsel2xdmf.py data.conf

2. Open Paraview

3. Load Particle Data

       > File > Open > data_particle.xdmf

       > Apply

4. Load Fluid Data

       > File > Open > data_fluid.xdmf

       > Apply

5. Draw bounding box

       > Sources > Box

        X Length = 128

        Y Length = 64

        Z Length = 32

        Center   = 64, 32, 16

        Representation = Outline

       > Apply

6. Fix Particle visualization

       In the pipeline browser, select data_particle.xdmf

       > Filters > Common > Glyph

        Glyph Properties:

        Glyph Type   = Sphere

        Radius   = 2

        Scale Mode   = Off

        Scale Factor = 1.0

        Uncheck "Mask Points"

        Uncheck "Random Mode"

        Display:

        Coloring = Solid Color (click edit and choose favorite color)

       > Apply

7. Add particle orientation vectors

       Again, in the pipeline browser, select data_particle.xdmf

       > Filters > Common > Calculator

       Properties:

       Attribute Mode   = Point Data

       Result Array Name = orientation

       In the input field (under the result array name field) type:

       QR_0*iHat + QR_1*jHat + QR_2*kHat

      [QR is the particle orientation matrix, x-axis = (QR_0, QR_1, QR_2), y-axis = (QR_3,QR_4,QR_5), z-axis = (QR_6, QR_7, QR_8)]

       > Apply

8. Visualize orientation vectors

       Select Calculator1

       > Filters > Common > Glyph

       Properties:

       Vectors   = orientation

       Glyph Type   = 2D Glypgh

       Scale Mode   = Off

       Scale Factor= 4.0

       Uncheck "Mask Points"

       Uncheck "Random Mode"

       > Apply

9. Compute magnitude of fluid Velocity

       select data_particle.xdmf

       > Filters > Common > Calculator

       Properties:

       Attribute Mode   = Point Data

       Result Array Name= u_mag

       In the input field type:

       mag(u)

       > Apply

Display options should now be enabled
   Display:
   Representation   = Volume
   Coloring   = u_mag

   Click on the "Edit" coloring button
   In the color map editor, look for
   "Rescale to data range over all time steps" options
   Accept and Update

10. Save project and exit (you can use same visualization setup again)