Title:

**Objective Partitioning – A novel methodology for the segmentation of FEA datasets**

Paragraph #1:

**What is Objective Partitioning?**

The Finite Element Method (FEM) has been widely used in engineering to determine the physical response of a material to a stimulus. The method has been particularly useful for the prediction of load distributions on assemblies and non-standard geometries, with the goal of identifying regions of possible failure. Despite its widespread implementation, little work has been done to standardize the means of analyzing regions of interest within these assemblies. Objective Partitioning seeks to bridge this gap by allowing the user to surround regions of interest, using standard geometries, in an attempt to record and track physical parameters throughout the simulation.

Paragraph #2:

**What is the advantage of using Objective Partitioning?**

* Sample data from a region of elements rather than singles and neighbors
* Define regions using standard geometries described by arbitrary parameters (e.g. sphere – radius)
* In the case of deforming meshes, displacement fields update the position of the objective partitions automatically
* Modify input parameters using excel, instead of interfacing through the command window

Paragraph #3:

**Requirements**

* Users must have a copy of MATLAB® and Microsoft Excel
  + Program has been tested for the 2013 release of MATLAB® and Excel
* Current version has been optimized [FEBio](http://febio.org/febio/) and [PostView](http://febio.org/postview/)