**1. When is it appropriate to use Weber segmentation?**

Weber segmentation is most suitable for images with significant differences in brightness between different regions or objects. This technique is particularly useful for segmenting images of industrial or biological specimens, with an emphasis on identifying areas of interest based on their brightness or contrast.  
  
**2.What are the a and b color coordinates of the CIE Lab color space in a grayscale image?**In the CIE Lab color space, the a and b color coordinates represent the red, green and yellow and blue components of a color. Axis a represents the green/red component, which ranges from -128 (green) to +127 (red); The b axis represents the blue/yellow component, which ranges from -128 (blue) to +127 (yellow).

**3. What is the reason for performing an image segmentation in the CIE Lab color space and not in the original RGB one?**CIE Lab color space separates color information from brightness information, making it more suitable for image segmentation. Meanwhile, CIE Lab color space is based on the perception color theory, which can better reflect human's perception of color.