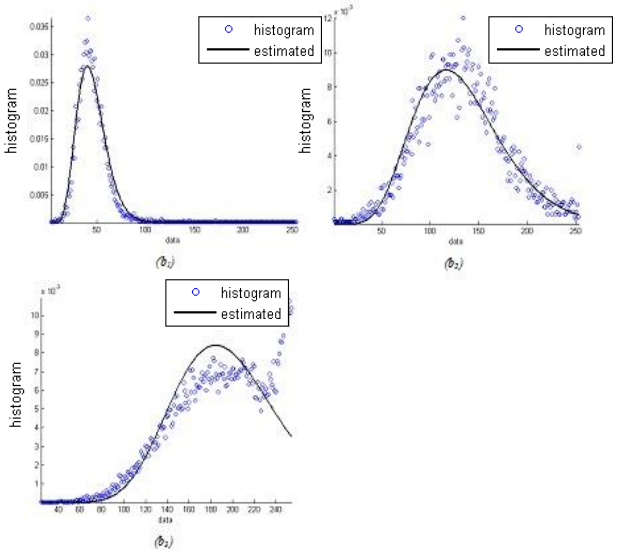


Figure 4. Histogram and Gamma distribution with estimated parameters of segmented regions ($b_1$, $b_2$, $b_3$) with $N_P$ =800 for SAR intensity image shown in Figure 2.

## 6. CONCLUSION

In this research, a novel, adaptive and fast CVT based segmentation methodology is developed. The model takes advantage of both regional and local information extracting with the aid of R-BCVT and k-mean clustering, respectively. The Adaptivity of the presents algorithms arise from the optional selection of number of classes and centroidal Voronoi polygons as well as calculation of distance function in one (mean) and two (mean-STD) dimension. Furthermore the user is authorized to manually determine the filter window and buffer zone for segmentation process. Certainly, user specification of generating seeds is possible. Similar to many segmentation methodologies, the presented algorithm conveys some limitations, for instance, deficiency of the model in detection of objects in noisy texture images. In such cases integration of the methodology with some other global segmentation models such as fuzzy and MRF models is recommended. The fuzzy models taking advantage of definition a threshold value for proximity of a segment to the associated homogenous regions. For instance the centroidal Voronoi polygons located on the border of two or more classes can be categorize as less reliable area than other polygons within a cluster.

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