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Mateos-Pérez, J. M.; Soto-Montenegro, M. L.; Peña-Zalbidea, S.; Desco, M.; Vaquero, J. J. (2016). "Functional segmentation of dynamic PET studies: Open source implementation and validation of a leader-follower-based algorithm". *Computers in Biology and Medicine*, v. 69, February, pp. 181-188.
DOI: 10.1016/j.combiomed.2015.12.012

Supplementary Material File 1: application of this algorithm to simulated data.

Proyectos:

PI11/00616

PI14/ 00860

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TEC2014-56600-R

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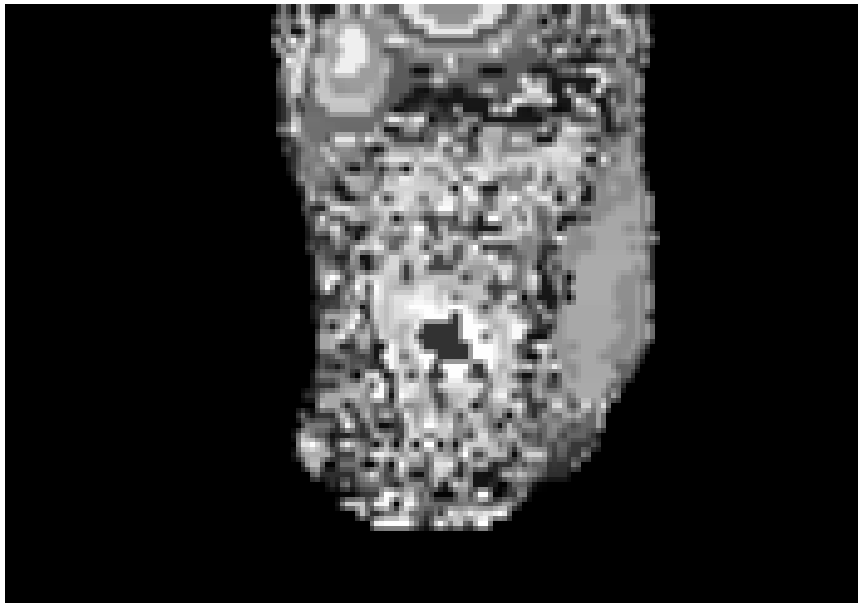
RGP0004/2013

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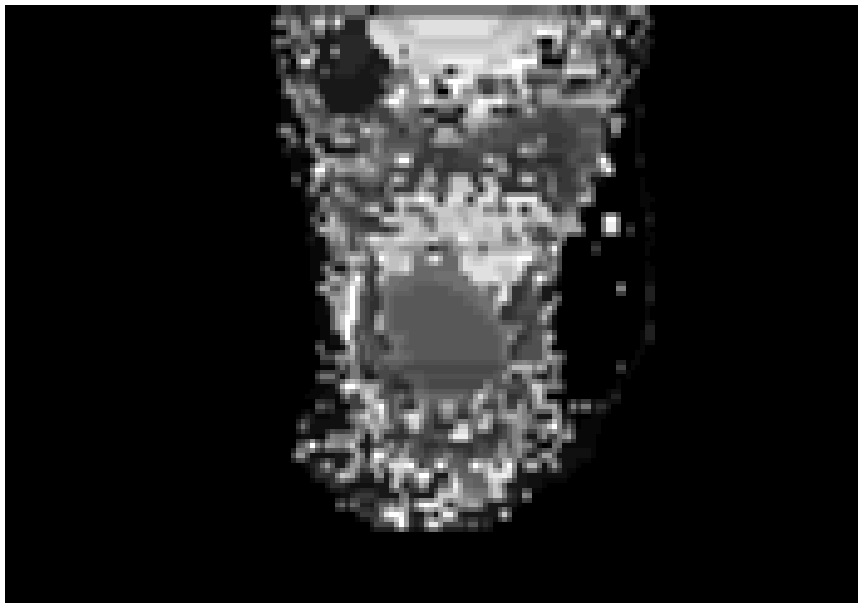


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For comparison purposes, the figures below show the results for the k-means segmentation with $k = 150$, as specified in the Materials and Methods section, along with a segmentation with the proposed leader-follower algorithm (threshold = 0.6).



k-means ($k = 150$)



Leader-follower (threshold = 0.6).

While in some cases the k-means algorithm is able to correctly segment both the input function and the tumor area, at least visually, the extraction of the time-activity curves is not restrictive enough to obtain quantitative values comparable to those obtained via manual segmentation. A bar plot, similar to the one used in the main manuscript, is shown below. The “automatic” results belong to the k-means algorithm.

