Weighted nucleoli and dually essential coalitions *

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We consider linearly weighted versions of the least core and the (pre)nucleolus and investigate the reduction possibilities in their computation. We slightly extend some well-known related results and establish their counterparts by using the dual game. Our main results imply, for example, that if the core of the game is not empty, all dually inessential coalitions (which can be weakly minorized by a partition in the dual game) can be ignored when we compute the per-capita least core and the per-capita (pre)nucleolus from the dual game. This could lead to the design of polynomial time algorithms for the per-capita (and other monotone nondecreasingly weighted versions of the) least core and the (pre)nucleolus in specific classes of balanced games with polynomial many dually essential coalitions.

*Paper available from http://unipub.lib.uni-corvinus.hu/2480/