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John P Albert* (jalbert@ou.edu), Department of Mathematics, Norman, OK 73019. *On the problem of subadditivity in the concentration-compactness method.* Preliminary report.

Often, relative compactness of minimizing sequences for a constrained variational problem is proved by a simple application of Lions' concentration-compactness lemma, in which one first establishes that the minimum value of the objective functional depends strictly subadditively on the values of the constraint functionals. In some applications, however, the strict subadditivity is difficult to verify, or in fact does not hold. In such cases, results may still be obtained by using more refined versions of the concentration-compactness lemma, such as the "bubble decomposition" lemma of P. Gérard. Examples discussed here include the problem of proving existence of ground states for an NLS-KdV system (joint work with Santosh Bhattarai) and the variational characterization of KdV multisolitons (joint work with Nghiem Nguyen). (Received July 25, 2017)