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Remarks on the stability of the p-obstacle problem.

Abstract: The p-obstacle problem corresponds to a particular class of degenerate variational problems with a constrain. It is characterized by the presence of unknown subsets where the solution coincides with the obstacle, which raise additional difficulties and interesting questions, in particular, in what concerns their continuous dependence on data. Without knowing very precise properties on their free boundaries, but using the known local regularity of the gradient of the corresponding solutions, it is possible to extend to the cases $1 < p < 2$ and $p > 2$, a previous sharp estimate in L^1 on the characteristic functions of the coincidence sets with respect to changing different non-degenerating forcing terms. This result is obtained by an extension of a technique of Brzis, that was developed by the author for the obstacle problem in the case $p = 2$.