

## Werk

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## Symplectic homology II

### A general construction

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#### 1 Introduction

In [11] the second and third author introduced a symplectic homology theory. By means of a general construction, given real numbers  $a < b$  and an integer  $k$  they assigned to each open set  $U$  of  $\mathbb{C}^n$  a group  $S_k^{[a,b]}(U)$  and studied its properties. In the present paper which continues the work in [11], we show how this construction can be carried over to more general manifolds. We assume the reader to be familiar with [11], since there are many constructions which we recall here in a more general set up without giving a detailed proof. In fact, the arguments given in [11] work under more general circumstances at least if some topological assumptions are met. Only in the case that there is a considerable difference we give complete details.

For applications we refer the reader to [13] and the forthcoming paper [14]. For motivation of the present construction we refer the reader to [11]. However we recall that the crucial observation made [2] is that periodic orbits for Hamiltonian systems can be used to construct many new symplectic invariants. Our construction in [11] and the present paper precisely exploits the same aspects of this observation. We also would like to point the attention to [3, 4, 5] for other applications of this "philosophy".

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\* Andreas Floer died on May 15th, 1991.