ADI JARDEN, ALON SITTON, Independence of Sets Without Stability.
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We prove the existence of an independence relation on sets, one can define dimension by it, assuming that we have an abstract elementary class with a forking notion that satisfies the axioms of a good frame minus stability.

Introduction. In [JrSh 875] we study stability theory without assuming stability, but weak stability. The main purpose is to study abstract elementary classes (in short a.e.c.'s) which are $PC_{\kappa_0}$. The theorems we prove here, can serve this purpose. But they might be applied in other contexts too.

The frame we define in the present paper ("good frame minus stability") is similar to the weak forking notion which is defined in [GrKo], which is parallel to simple first order theories.

The independence relation defined here is similar to the independence relation which is defined in [Sh 705]. However we improve the theorems that were obtained in [Sh 705]:
1. We do not assume any trace of stability.
2. We do not assume successfulness.
3. We do not assume goodness$^+$. 
4. We prove several important propositions without assuming that $K_{3,uq}$ has existence.


[GrKo] Rami Grossberg and Alexei Kolesnikov. Excellent Abstract Elementary Classes are Tame. 26 pages, last updated 9/9/05. ps, pdf. submitted Elementary Classes are Tame. 26 pages Preprint available at arxiv.org/abs/math.LO/0509307


