

## New insights into reaction dynamics of light weakly bound nuclei

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Significant research effort is currently aimed at understanding the interactions of weakly bound nuclei [1–3]. Experiments have shown that breakup and transfer processes are very significant for such nuclei, and that fusion is suppressed at energies above the barrier (compared to expectations for well bound nuclei). However, a quantitative understanding of the mechanism of breakup and its relationship with near-barrier fusion is still elusive. Recent measurements of breakup of  ${}^6,7\text{Li}$  and  ${}^9\text{Be}$  at energies below the barrier, where there is no significant capture of the fragments, have been made at the Australian National University. The highly pixellated detector array covering a wide angular range allowed the complete energetics of the breakup process to be reconstructed, giving a clear picture of the physical mechanisms triggering breakup. A recently developed [4] classical trajectory model allows mapping from sub-barrier breakup to above-barrier fusion suppression. This talk will discuss these advances towards obtaining a full picture of the reaction dynamics of weakly bound nuclei.

### References

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