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How does a Tiger beetle catches its prey? Z. JANE WANG, Physics and MAE, Cornell University, ANDREAS HASELSTEINER, University of Bremen, COLE GILBERT, Entomology, Cornell University — When a beetle chases its prey, what laws does it follow, if any? Theoretically, there are multiples strategies that a beetle could use to intercept its prey. By analyzing the pursuit dynamics of Tiger beetles, we found that the beetle adjusts its orientation to minimize the angle between its heading and the prey. The adjustment is linearly proportional the error angle with a time delay. We offer a mechanical explanation of this correlation between the angle and the angular rotation of the beetle. We further suggest an physical interpretation for the time delay constant.

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