

## 転倒のバイオメカニクスとそれを制御する脳神経機構

山形大学	山口峻司
(共同研究者) 同	本田博之
同	伊豆田義人
同	加藤義彦
同	増田健
同	王悦紅

### Studies on Falling Movement and its Neuronal Control

by

Takashi Yamaguchi, Hiroyuki Honda,  
Guido Izuta, Yoshihiko Kato, Ken Masuda,  
Yuehong Wang  
*HASFE, Graduate School of Science and  
Technology, Yamagata University*

#### ABSTRACT

To understand malfunction of postural control system for human bipedal standing, we studied falls from a rocking-platform and a thin beam by motion analysis and electromyography. Five male subjects (age, 27+/-6y) stood on a rocking-platform (radius, 90mm ; height 100mm) and on a beam (width, 40mm ; height 100mm) with eyes open and closed. The falling process was divided into three phases. In the first phase the subjects successfully stood on the tested platforms (the standing phase) . The second phase was a critical phase, in which the subjects made a maximal effort to prevent fall (the critical phase) . In the last phase, protective stepping was induced