

**Analysis of knee  
angular velocity of the  
full – instep kick  
between novice and  
elite soccer players**

**Patrick Kabuye**

**University of Texas at El Paso**

# OVERVIEW

- ◆ Introduction
- ◆ Methods
- ◆ Results
- ◆ Discussion





# Introduction

- ◆ The game of soccer
- ◆ Knee angular velocity
- ◆ Previous studies
- ◆ Importance of study



# Purpose of study

To analyze the knee angular velocity of novice and elite soccer players performing a full – instep kick



# Methods

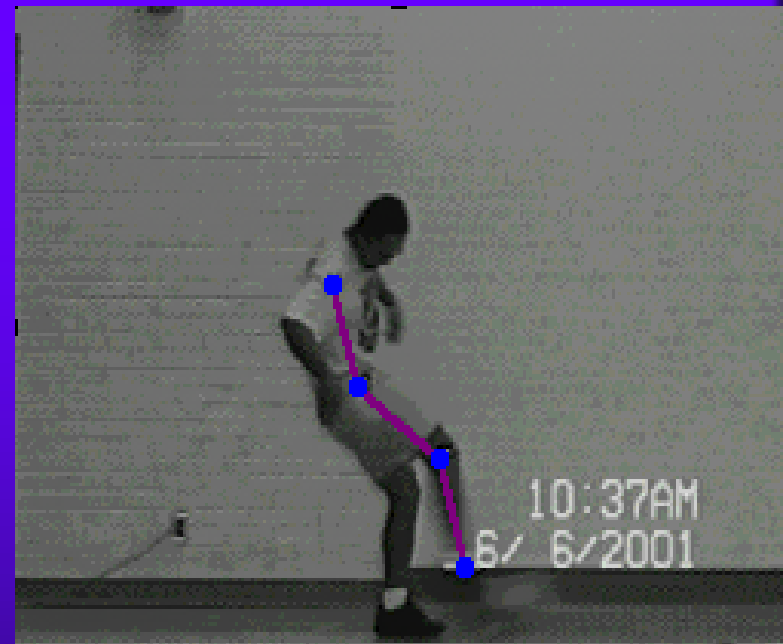
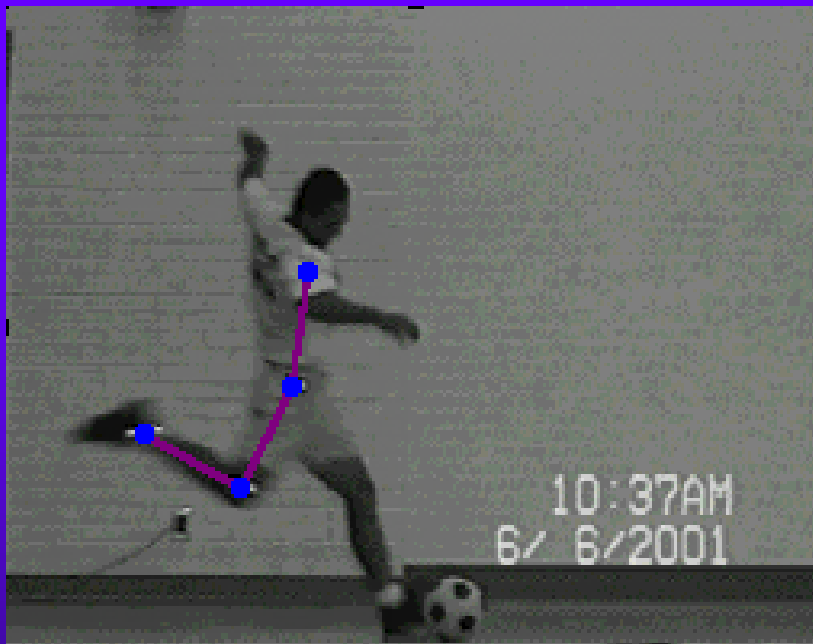
- ◆ Subjects
- ◆ Three trials
- ◆ One RSA video camera
- ◆ 4 markers
- ◆ Variables

# Results

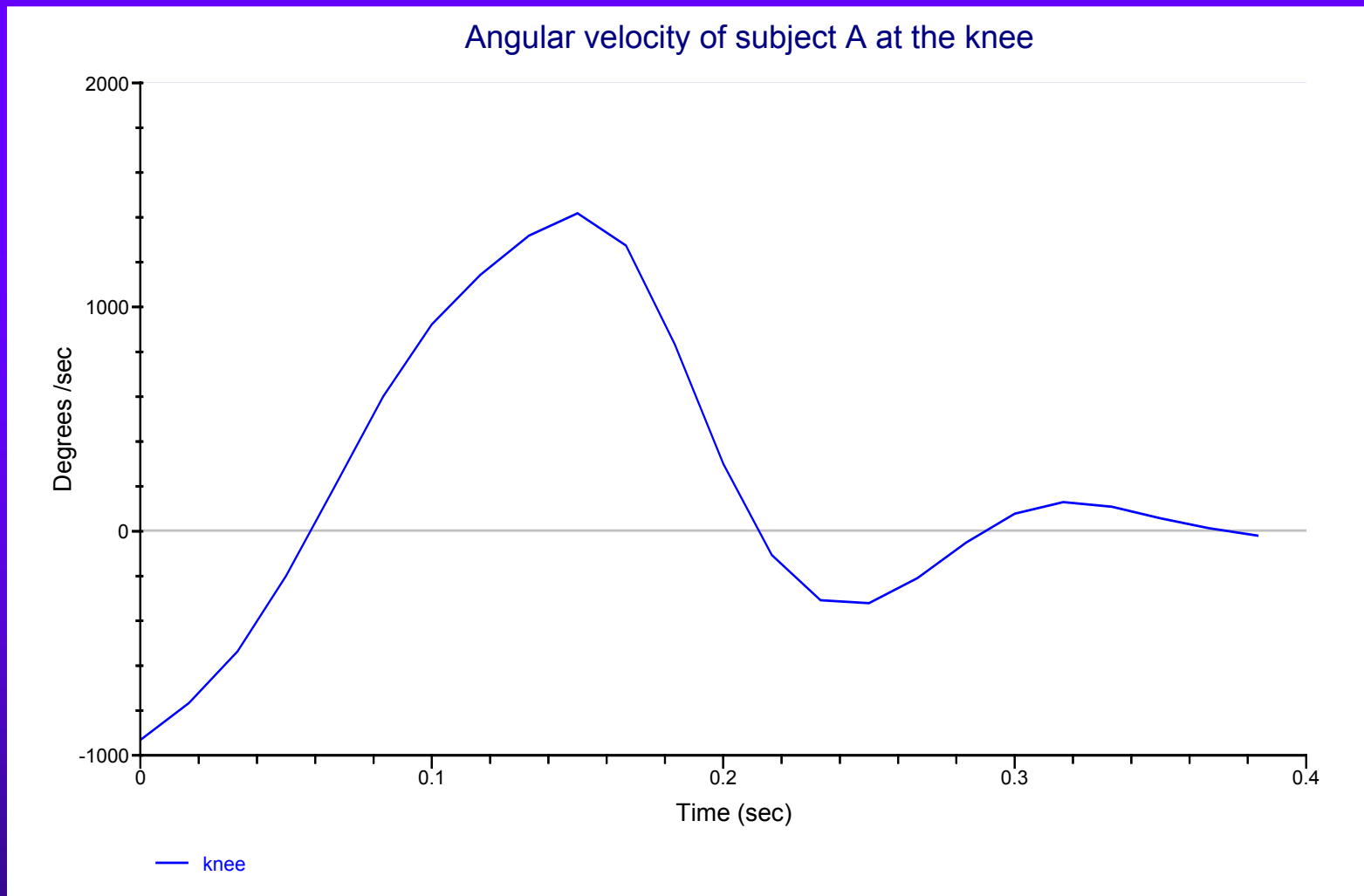
- ◆ Data and phases
- ◆ Table

Subjects	Minimum	Maximum	Time (s)
A	-931.8 deg/s	1417.4 deg/s	0.145
B	-585.9 deg/s	563.8 deg/s	0.245
C	-428.2 deg/s	852.2 deg/s	0.12

# Angular velocity of subject A



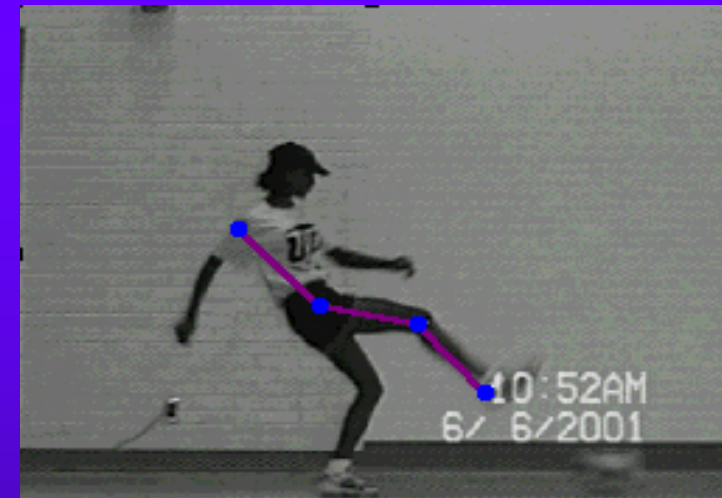
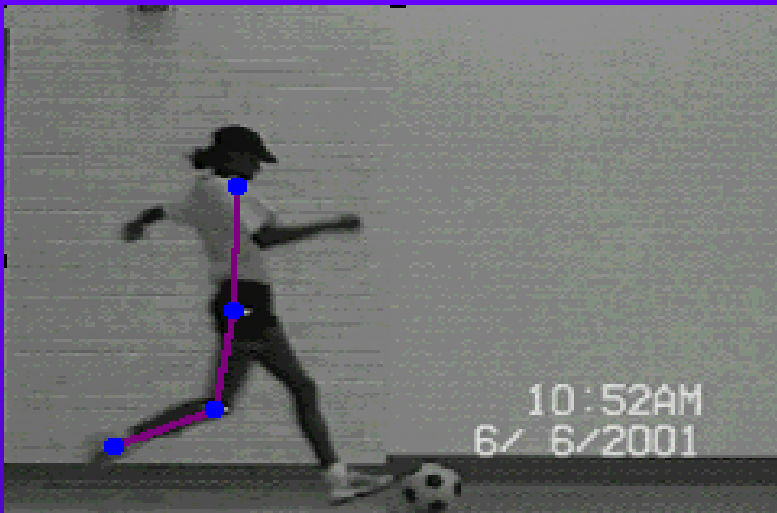
Airborne phase to Impact phase



Angular velocity- Minimum to Maximum

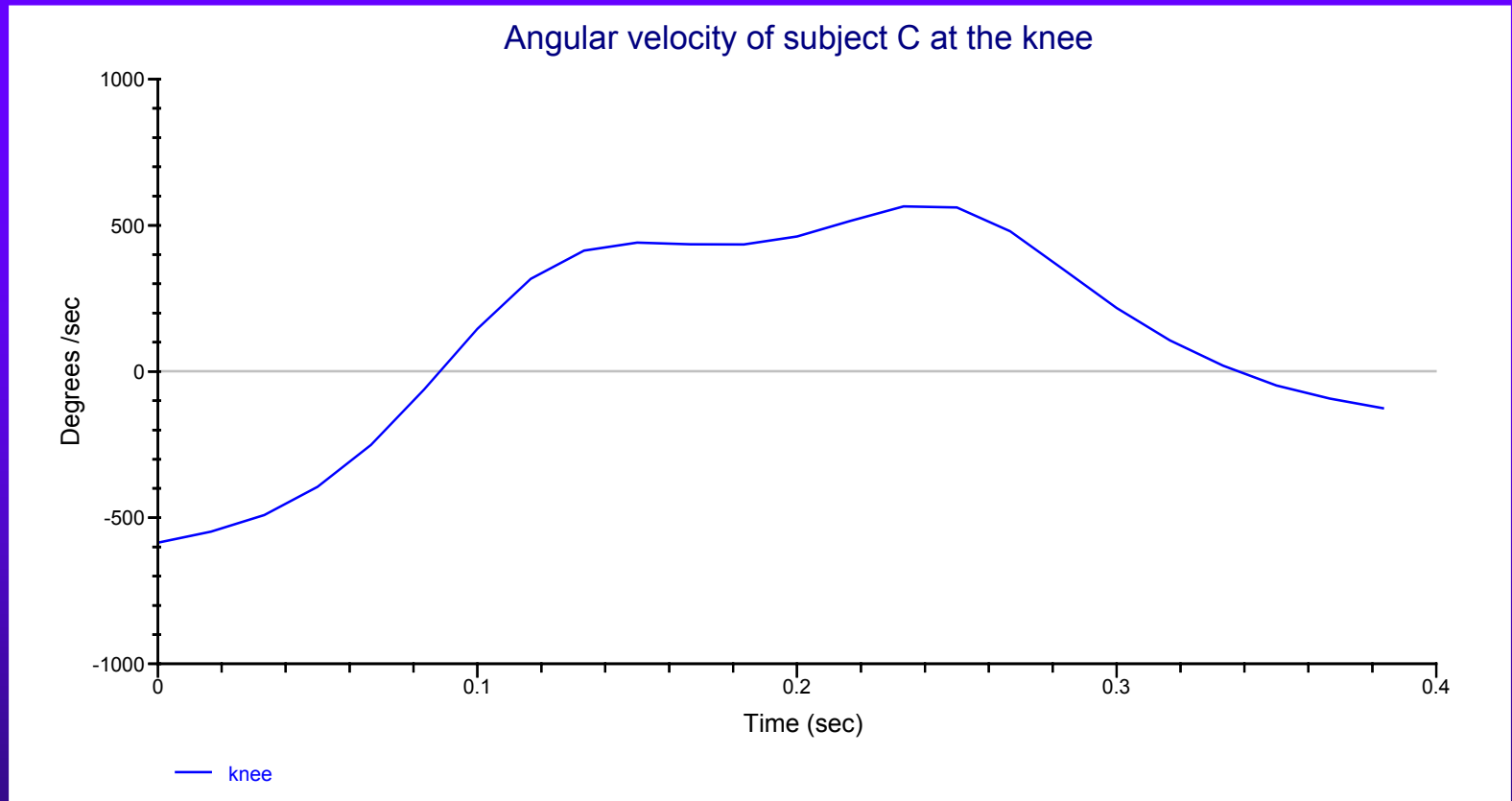
-931.839 deg/sec. to 1417.471 deg/sec

# Angular Velocity- Subject C



Airborne to Impact phase

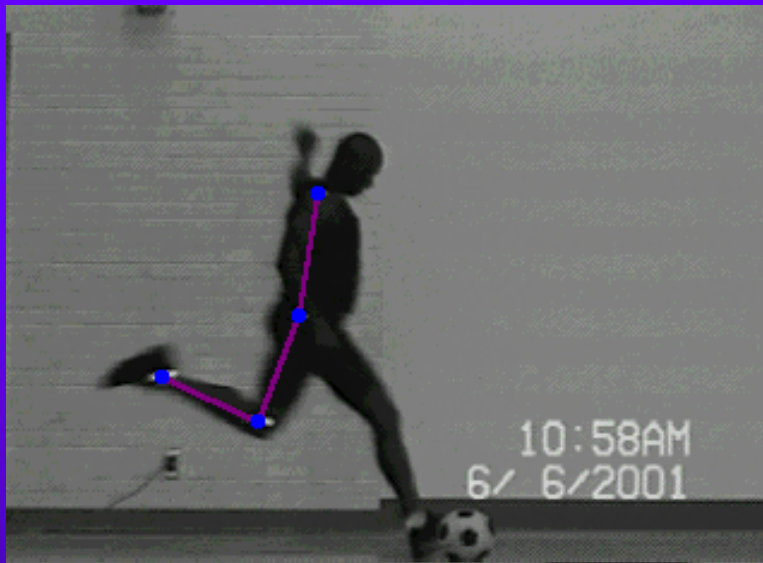
# Angular velocity of subject C



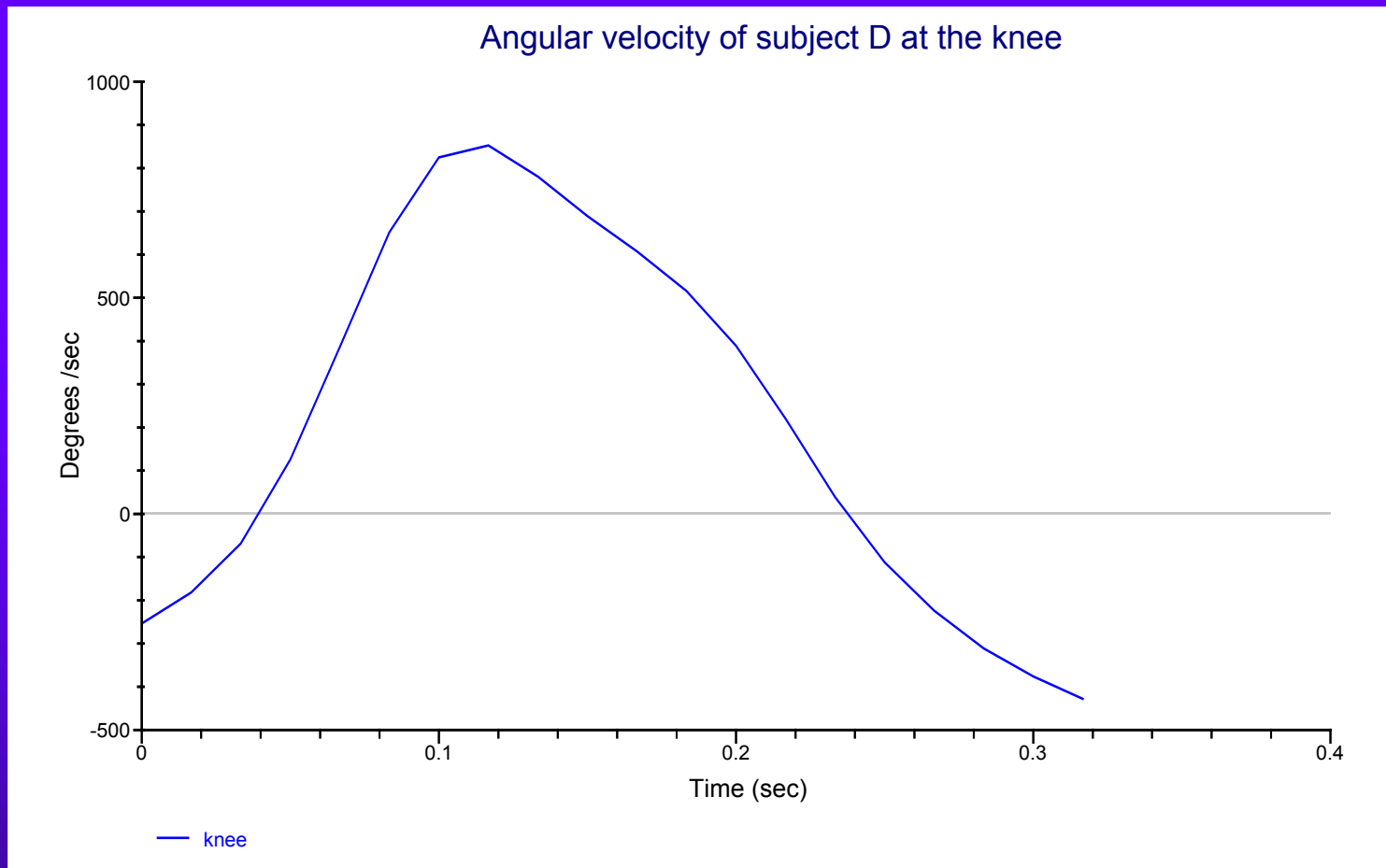
Angular velocity Minimum to Maximum

-585.931 deg/sec to 563.888 deg/sec

# Angular Velocity- Subject D



Airborne phase to Impact phase



Angular velocity Minimum to Maximum

-428.270 deg/sec to 852.206 deg/sec



# Discussion

- ◆ Velocity difference
- ◆ Study by Luis Augusto
- ◆ Torque
- ◆ Subjects
- ◆ 3D Analysis



# References

LEVANON, J. and J. DAPENA.  
Comparison of the kinematics of the full-  
instep and pass kick in soccer. *Med. Sci  
Sports Exerc.*, Vol. 30, No. 6, pp. 917-927,  
1998.

Luis, A. T. Kinematics of kicking as a  
function of difference sources on accuracy.  
*Perceptual and Motor Skills*, 1999, 88,  
785-789.

