

# Physics of Extreme Sports

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ArlsPHOTO.com  
by Adam Smith

# What is free-fall?

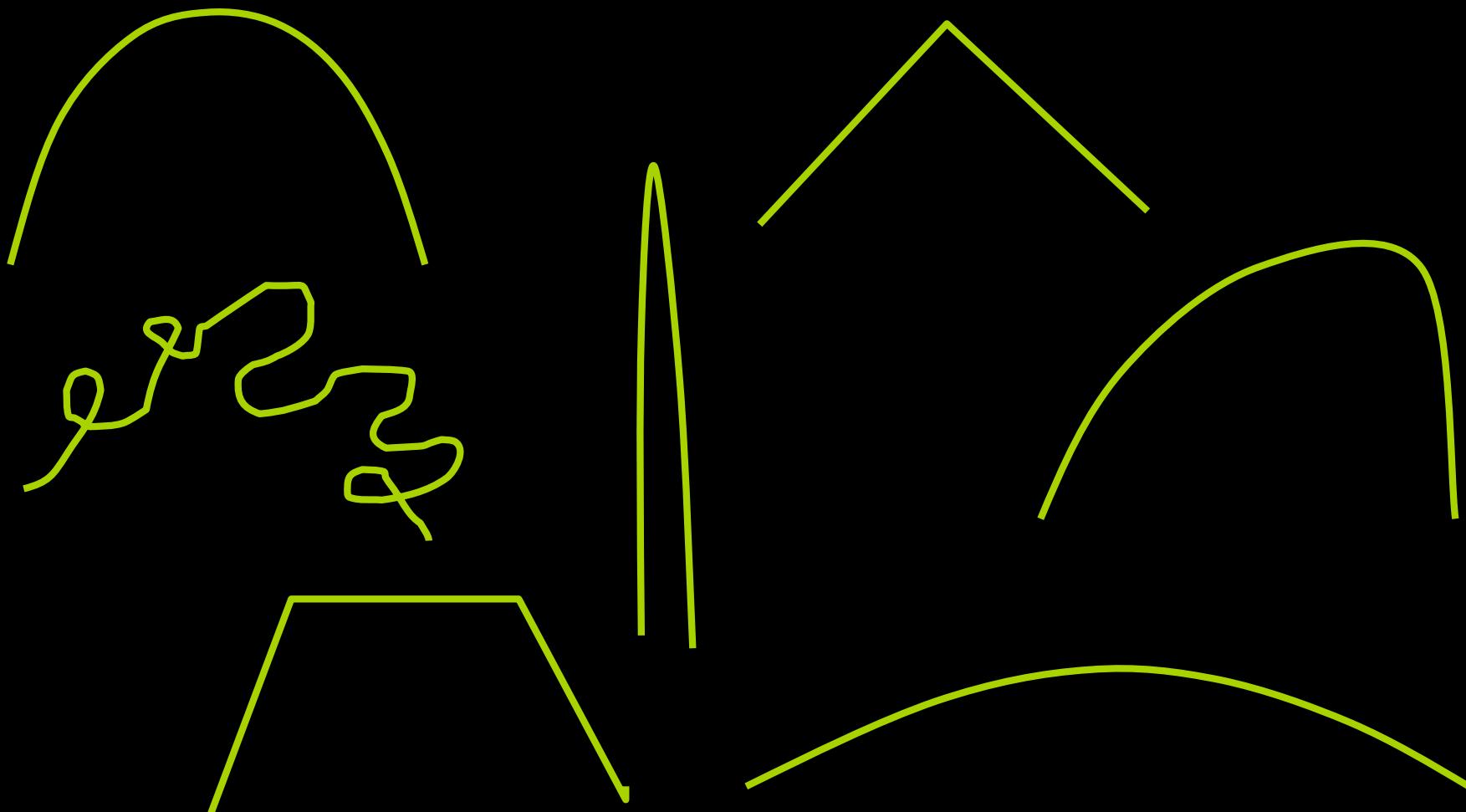


# What is free-fall?



- Only force acting is gravity
- “Projectile Motion”
- Examples of free-fall in sports?
- Does something have to be going down to be in free-fall?

# Possible free-fall paths?



# Possible free-fall paths?





# Extended Objects

- What part of an extended object follows the free-fall curve?

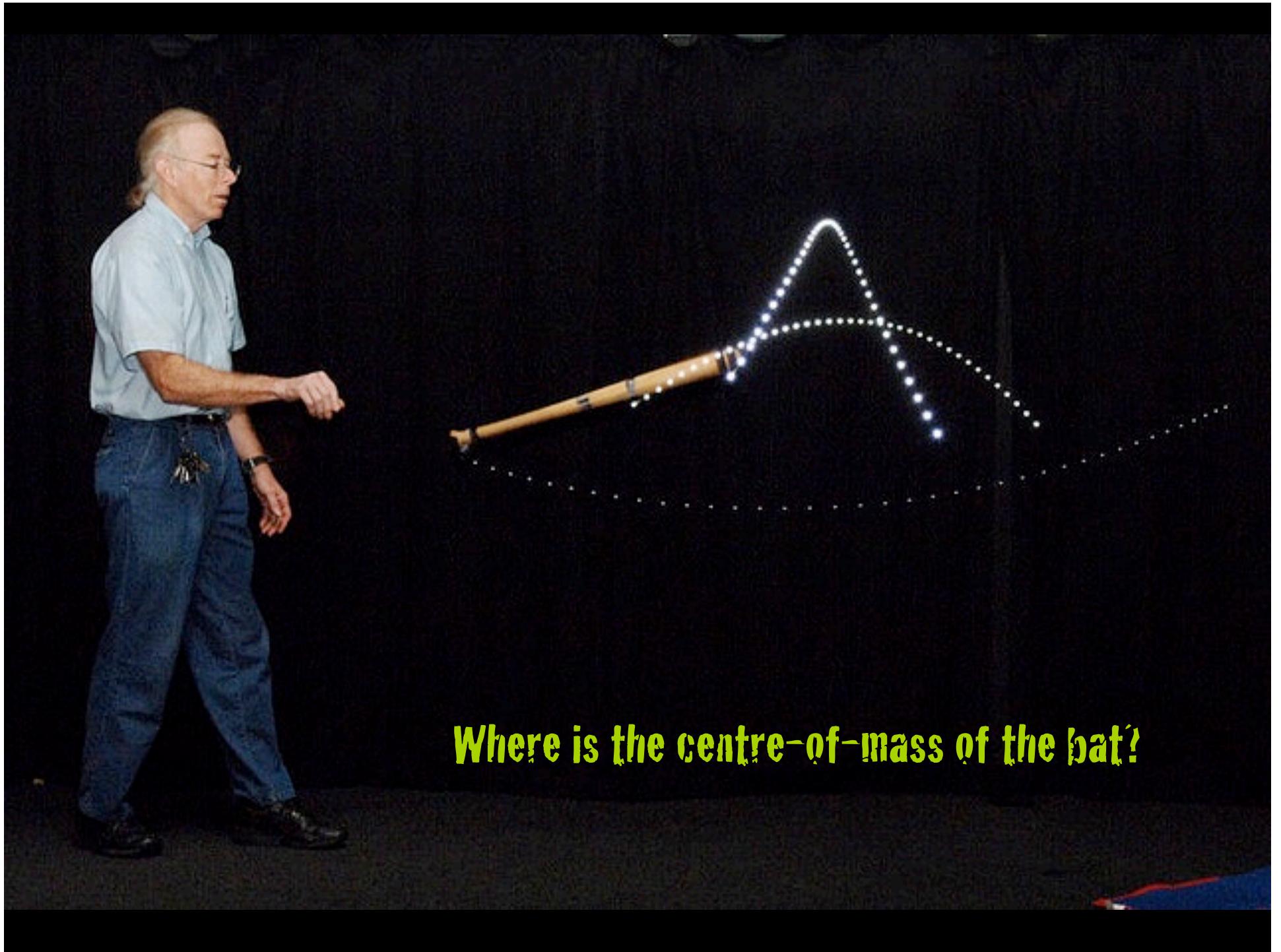


# Extended Objects



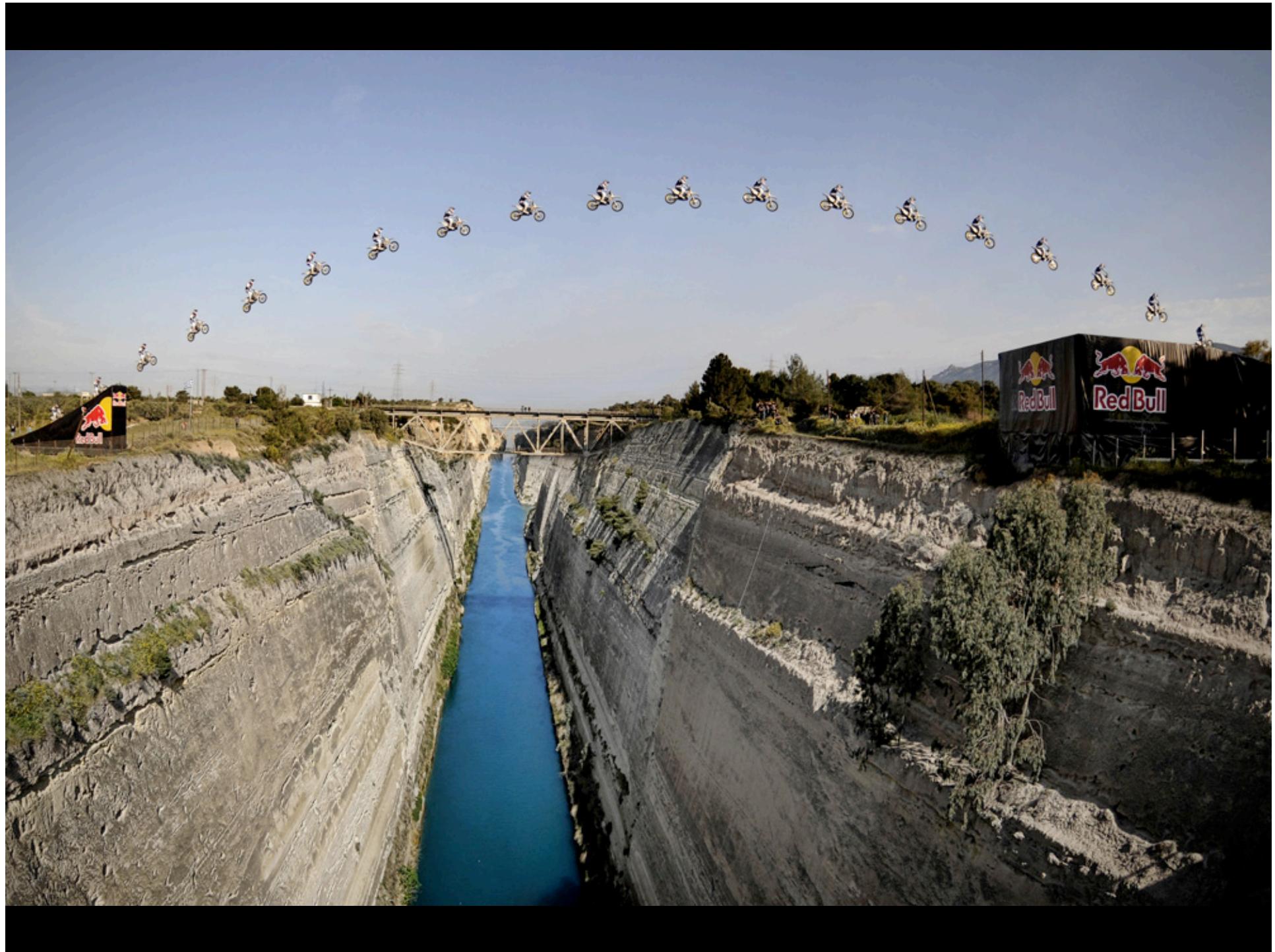
- What part of an extended object follows the free-fall curve? **Centre-of-Mass**
- Where is the Centre-of-Mass of a person?  
Is it constant? Can it change?
- Does it have to be a part of the actual body/equipment?





Where is the centre-of-mass of the bat?







Where is the centre-of-mass? Before/after the biker lets go?