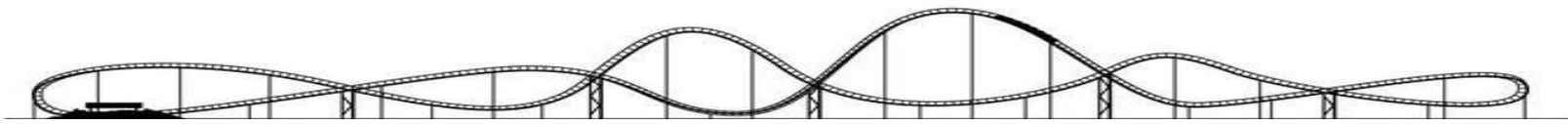
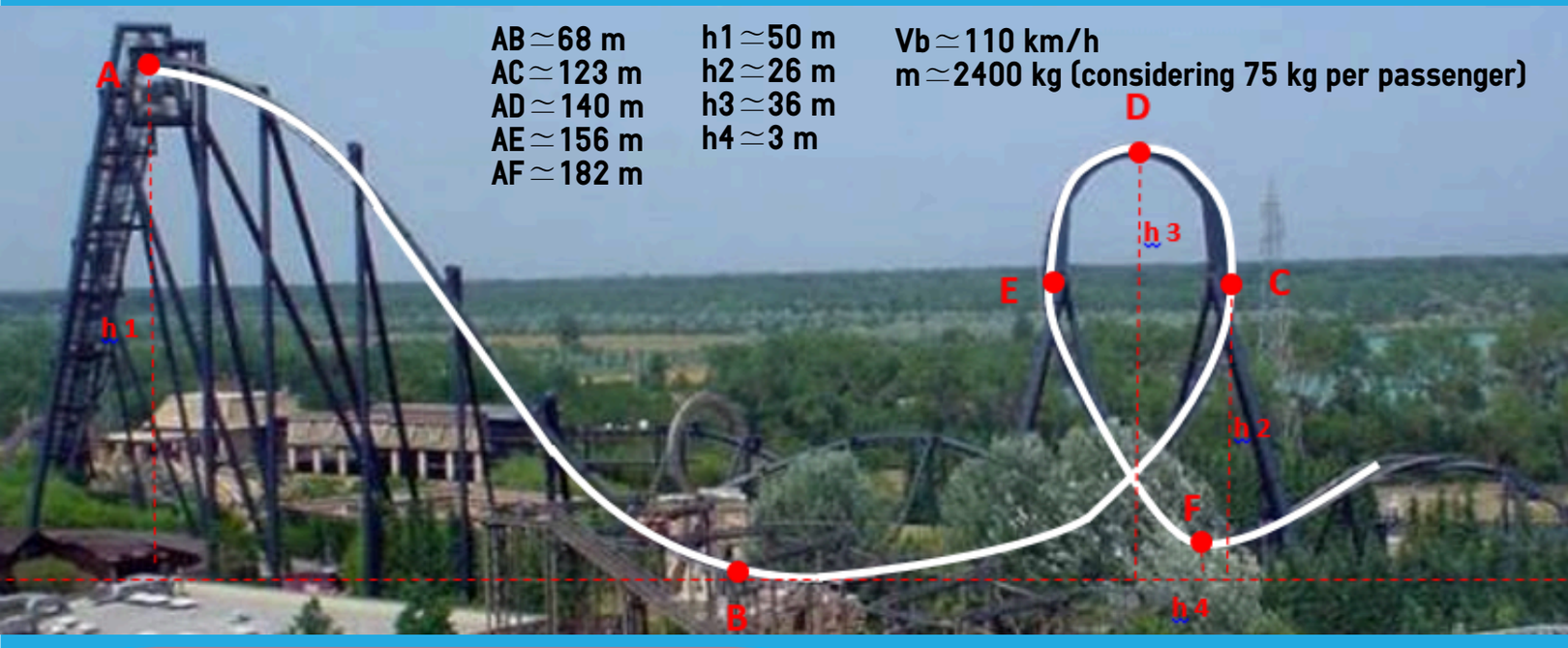


# KATUN


## SPEED AND ENERGY




AB ≃ 68 m
AC ≃ 123 m
AD ≃ 140 m
AE ≃ 156 m
AF ≃ 182 m

h1 ≃ 50 m
h2 ≃ 26 m
h3 ≃ 36 m
h4 ≃ 3 m

Vb ≃ 110 km/h
m ≃ 2400 kg (considering 75 kg per passenger)

*At the beginning of the ride, the train has only potential energy given that we consider the moment before falling. Then it falls and it arrives in B, when it has kinetic and termic energy. After that it starts going up the loop, speed decreases like kinetic energy while potential energy increases. Once the train reached the top of the loop it has the minimum speed and high potential energy; thanks to this one the train is able to continue his way. In F we will resee a high speed again*

**A**
- V= 0
- Ep ≃ 1176000 j

**B**
- V ≃ 110 km/h
- Ec ≃ 1123632 j
- Q ≃ 52367 j

**C**
- V ≃ 71.2 km/h
- Ep ≃ 611520 j
- Ec ≃ 470448 j
- Q ≃ 94722 j

**D**
- V ≃ 49 km/h
- Ep ≃ 846720 j
- Ec ≃ 221952 j
- Q ≃ 107814 j

**E**
- V ≃ 69.3 km/h
- Ep ≃ 611520 j
- Ec ≃ 442368 j
- Q ≃ 120136 j

**F**
- V ≃ 102 km/h
- Ep ≃ 70560 j
- Ec ≃ 967872 j
- Q ≃ 140158 j

## SPEED GRAPH