



EnkiBonnet and PEDESTRIAN SAFETY SEMINAR Shanghai, April 19-20 2012

Venue: HENGSTAR facility, ZhangJiang High Tech Area



Theoretical course topics:

Biomechanics

Regulation environment

Bonnet analysis and design

Copyright © SimTech 2012 All rights reserved

Response Surface Optimization Strategy

The graph plots a response function $\Psi(x)$ against design variables x^1 . It shows an 'original' design space and an optimized design space with points 0, 1, 2, 3, 4, and 5. The optimization process is visualized as a series of points moving towards the minimum of the response function.

Problem n°1: The stiffer the rib, the more aggressive the hood

The graphs show HIC curves for child head impact. The left graph shows a peak of 200g for a small rib with HIC = 695. The right graph shows a higher peak of 200g for a stiff rib with HIC = 1650. The HIC interval is marked for both.

Whiteboard notes: Iterative optimization, M.D., STATIC, FEW STIFF RIBS

WAVE PROPAGATION AND IMPACT PBS.

- FRONT CRASH
 - Event duration: 30 - 50 msecs
 - Wave travel time: 1 - 3 msecs
 - Pressure waves
- PEDESTRIAN HEAD IMPACT
 - Event duration: 5 - 15 msecs
 - Wave travel time: 5 - 15 msecs
 - Flexure waves
 - Shear and flexure waves in wind

Whiteboard notes: Iterative optimization, M.D.

Hands-on EnkiBonnet training:

Process automation

Inner panel design

Optimization

Copyright © SimTech 2012 All rights reserved

