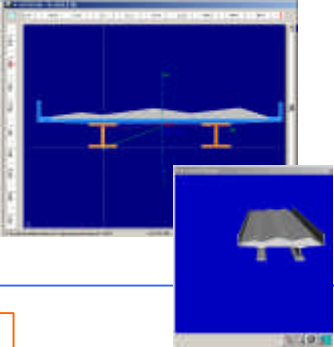

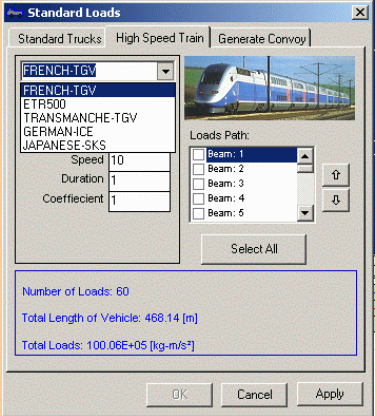
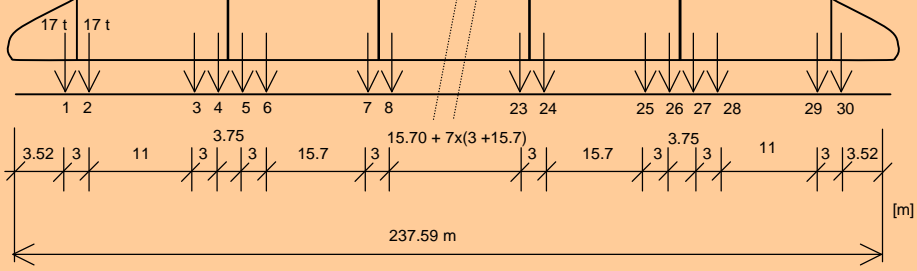


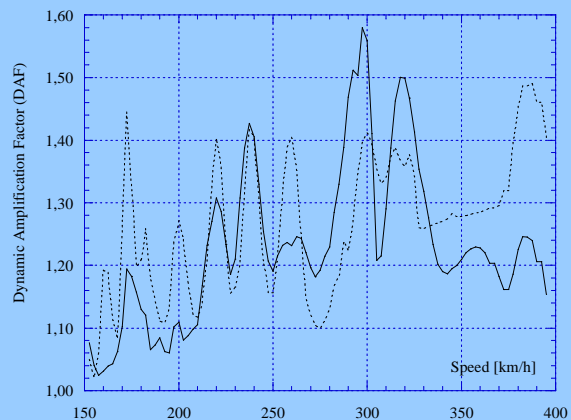
Geometric properties of the composite section are computed by ShapeDesigner software: www.mechatools.com



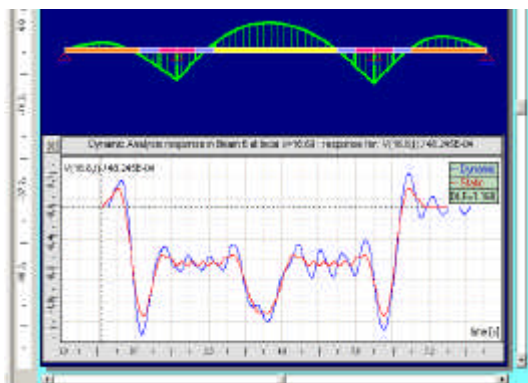
The French high-speed train (TGV)

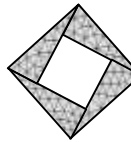


Some dynamics results and curves The critical speeds Vcr



Displaying graphics results for displacement, moment etc.





Bancel Viaduct example in BEDAS

Example of Bancel Bridge (France), dynamics analysis under moving French fast speed train(TGV) computed by BEDAS software:

The **Bancel** viaduct situated in the South-East of France, is a fast speed train(TGV) railway bridge . The viaduct is continuous bridge of 5 spans and 3sections kinds. Section 3 is a cracked concrete region, and the modular ratio between steel and concrete elastic modulus taken in this example is 10 under live loads. The coefficient of damping is take equal 0.5% of the critical damping and the train speed is varied from 150 to 400 km/h. and the viaduct is simply supported.

ShapeDesigner Software computes geometric properties of the transverse section (c) and are given as follow:

Section type	1	2	3
$r(\text{kg/m}^3)$	6447.48	80495.86	60622.4
$S(\text{m}^2)$	4.5320	0.363	0.482
$S_y(\text{m}^2)$	0.1495	0.162	0.162
$J(\text{m}^4)$	0.4100	0.410	0.410
$I_z(\text{m}^4)$	1.2150	0.6650	0.964

The Viaduct Model in BEDAS