ABSTRACT

New HSR lines are now under construction in France. Dynamic analysis under the high speed trains is systematically carried by the contractor’s design office in the final design stage. This is required systematically for steel and steel concrete composite decks which are now built for all the major bridges. Some small span concrete bridges with complex geometry are now also checked for their dynamic behaviour.

The dynamic analysis design is now commonly practiced with commercial software by most design offices.

This paper gives a brief presentation of HSR railway lines in France with the bridge structures and presents some case studies of dynamic analysis of some particular bridge type:

- Tied arch bridge in the TGV Méditeranée line
- Half through steel girder bridges in the TGV Est
- Composite twin girder deck in the Perpignan-Figueras line.
- Other deck structures.

The theoretical approach and the practical calculation method will be extensively explained. Some conclusions on the dynamic behaviour of the different deck structures will be pointed out.