CESAR LCPC 2D

FEA software for Civil Engineering

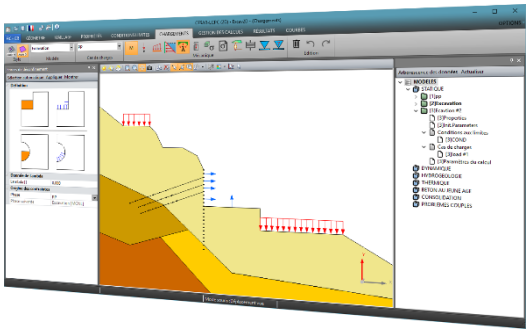
www.cesar-lcpc.com

Software for geotechnical engineering

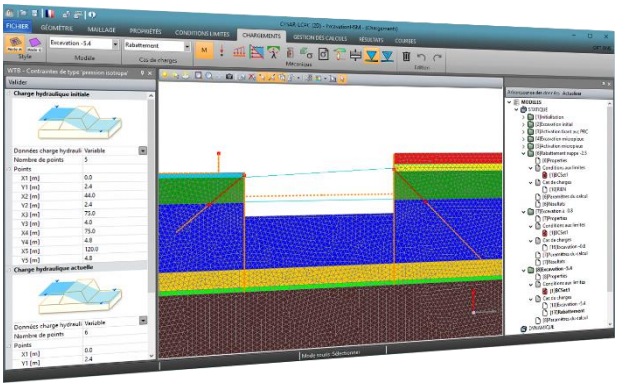
CESAR-LCPC is a Finite Element software for modelling and analysis of geotechnical problems. Reliable, powerful and user-friendly, it covers a large scope of applications in soil and rock mechanics (strains, stabilities…). With CESAR-LCPC, the geotechnical engineer has a powerful tool for conducting projects in embankments, excavations, foundation, tunnels…

FEA as companion of the geotechnical engineer

Staged construction, search of safety factors (c-phi reduction, limit pressure), CESAR proposes standard tools for modelling current geotechnical issues. For challenging projects, the engineer will operate the friction anchors, the homogenised reinforcements, the toolbox for constitutive models, unsaturated flows, etc.



A user-friendly environment



CESAR Graphical User Interface is a fully CAD-oriented work environment. Clear and well-documented toolboxes guide through all the steps of the model creation.
The sequence of calculation is made highly interactive by a tree allowing to share and to display sets of common data (properties, load cases, boundary conditions).

Key features

Rich content

CESAR associates physics required for modelling of geotechnical works: mechanics, hydrogeology, heat-transfer, dynamics.

Reliable support

itech & IFSTTAR are available to answer your technical questions. Our experienced team provides you with the appropriate level of response and training.

Flexibility

Far from being a black box, CESAR allows the edition of its data to generate parametric studies and scripts (Python) or allow connexions with other tools.

IFSTTAR

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Information, documents, demo version

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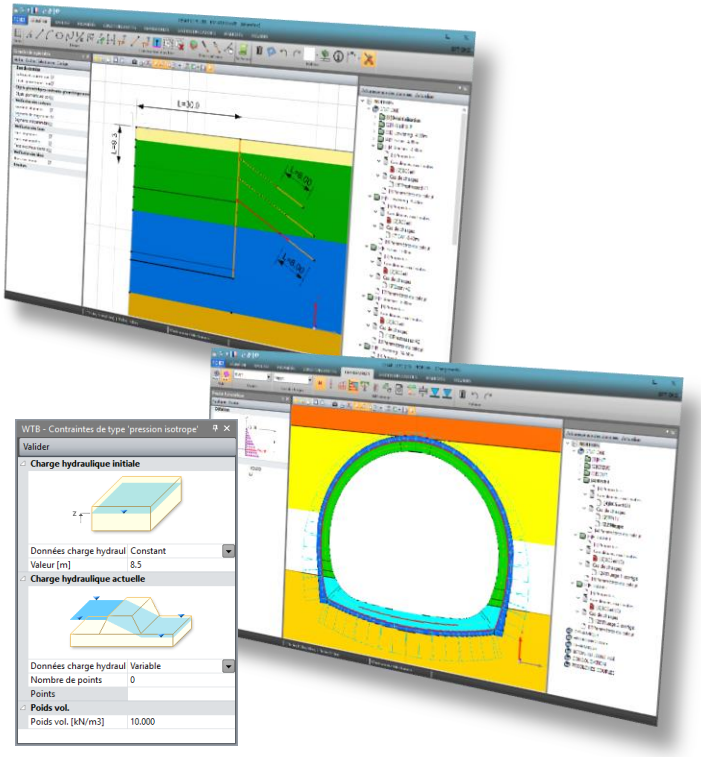
Tools for model generation



Geometry edition

- Standard CAD tools
- Scripts for tunnels
- Dimensions

Element library

- Surfaces: soils, massive structures
- Beams: retaining walls, lining
- Bars: anchors, geogrids
- Friction interfaces: contact, faults

Load library

- Activation/inactivation of material bodies
- Stress release in soil
- Nodal forces and various pressures
- Hydrostatic pressure
- WTB variation
- Stresses linked to thermal gradients
- Long-term effects

Constitutive models

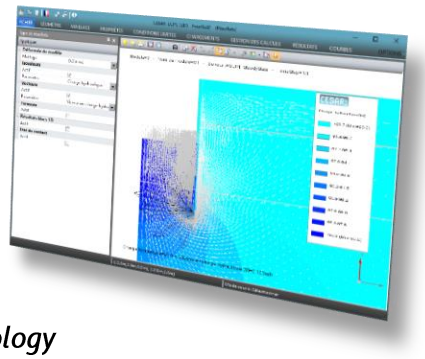
For soils

- Linear or non-linear elasticity
- Mohr-Coulomb
- HSM reduced
- Hoek-Brown

Properties set management

- Copy and share between stages
- Import/Export across studies

> See dedicated leaflet « Constitutive models » for the library of integrated constitutive models



Analyses

Staged construction

- Initial stress states
- Calculation management

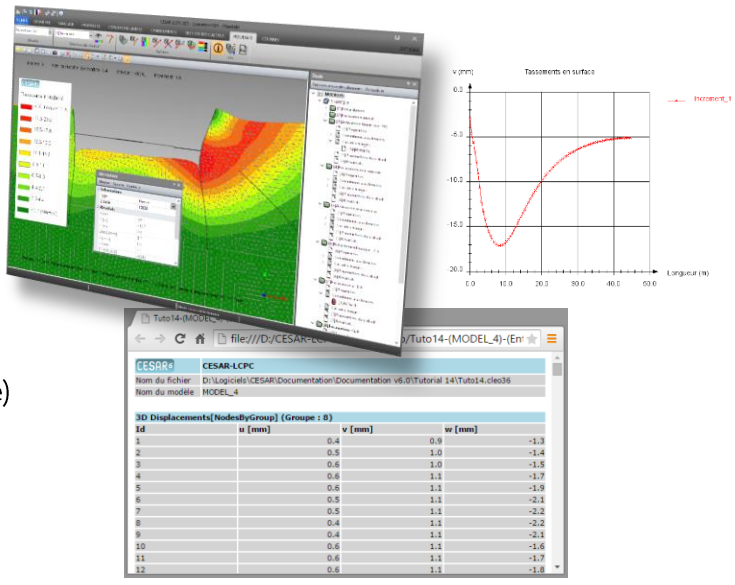
Hydrogeology

- Steady or transient flows
- Saturated or unsaturated soil mass

Coupling

- Consolidation
- Thermo-mechanics

Post-processing tools



Result display

- Loads in structural elements
- Displacement and stress isovalues
- Plastic strains
- Contact status (bonding, sliding, opening)

Graphs

- Scalar along a user-defined line
- Integration of stresses into forces N, V, M
- Tracking of points relative to increments (load, time)

Listings

- Choice of results to be stored
- Edit of results tables per object or stage

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