

FASTRUDL/NSO™

FEA tool for Offshore and Marine applications

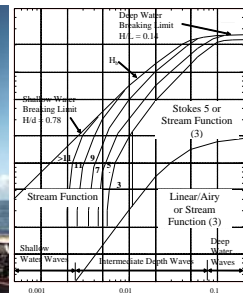
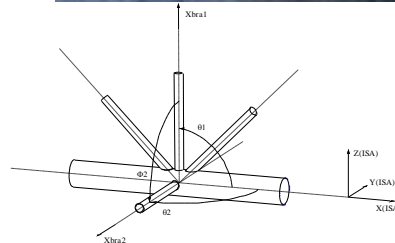
FASTRUDL/NSO™ (New STRUDL Offshore) is a finite element analysis software designed for engineers and professional people employed in a wide variety of application areas in many industries, with particular emphasis on Marine and Offshore structures.

FASTRUDL/NSO™ is constantly improved to meet the needs of the industry in accurately qualifying the strength of structures through computer simulations.

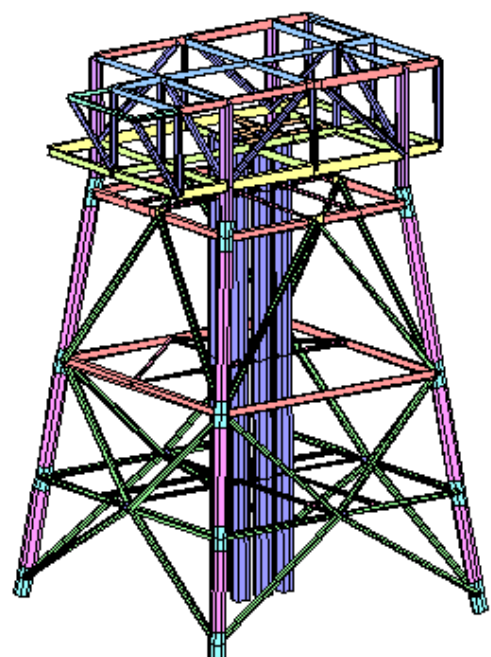
FASTRUDL/NSO™ originated from the integration of FASTRUDL, developed by Principia from the IUG's (Ices User's Group) version of STRUDL, with BV-STRUDL, developed by Bureau Veritas/C.Briwand from the IBM version of STRUDL, both derived from the original Massachusetts Institute of Technology (MIT)'s STRUDL-II program. The MIT version resulted from the Integrated Civil Engineering System (ICES) project, initiated by professor C.L.Miller, former head of the Department of Civil Engineering, MIT.

Main Features

- ◆ Fully interfaced with ISYMOST
- ◆ Frames and Finite Elements models up to 1 million nodes, high performance solver
- ◆ Multilevel substructures and superelements, non-structural components
- ◆ Database with full check-point and restart facility
- ◆ "Exact" beam elements with arbitrary local loads and detailed results at any section
- ◆ Extensive 2D and 3D Finite Element library including Shell, Continuum Shell and other specializations
- ◆ Gaps, contacts, plastic hinges and other connectors
- ◆ Static/Dynamic solvers
- ◆ Linear/Nonlinear analyses
- ◆ Built-in code checking and verification, including fatigue damage

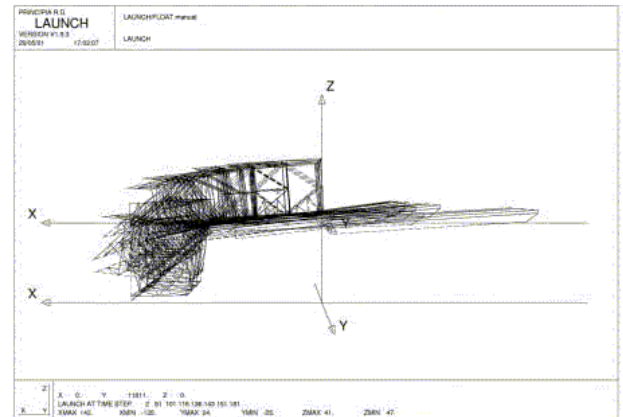
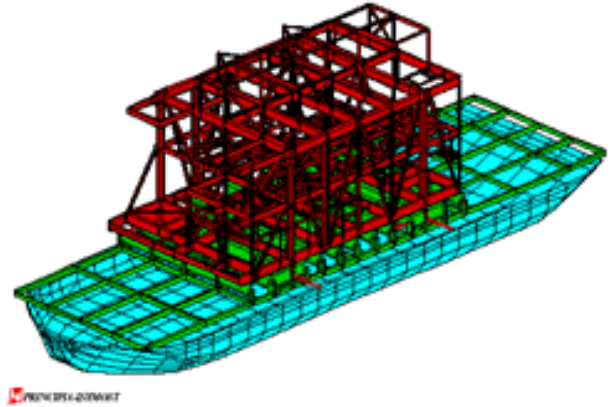


H/T_{wp} : Dimensionless wave steepness
 d/T_{wp} : Dimensionless relative depth
 H : Wave height
 H_b : Breaking wave height
 d : Mean water depth
 T_{wp} : Wave period
 g : Acceleration of gravity



Marine / Offshore

- ◆ Wave Loads generator (Morrison), Wind loads
- ◆ Code Checks (API WSD and LRFD, AISC, ISO, Eurocode, ...)
- ◆ Stiffened plating Checks (ABS, BV, DNV)
- ◆ Frame and Finite Elements Fatigue Analyses, deterministic or spectral (API, ISO, Class Rules & Recommendations, IIW, ...)
- ◆ Automatic calculation of local flexibilities at joints
- ◆ Stress Concentration Factors, Influence Functions (Efthymiou, Kuang, Lloyds, DNV, ...)
- ◆ Soil/Structure interaction (PY and TZ curves)
- ◆ P-Delta and other nonlinear geometric effects
- ◆ Boat impact



Float / Launch

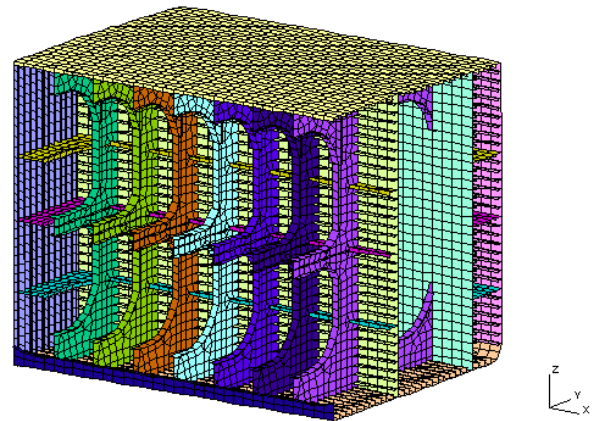
- ◆ Dynamic Launching of jackets
- ◆ Upending
- ◆ Equilibrium/Stability Analysis
- ◆ Structural analysis at any time step

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Technical support

Best in class client support is provided by email at nso-isymost@principia.fr. Our team of experienced structural engineers will always be pleased to bring timely responses to all your queries.



EUROPE-FRANCE (head office)
 PRINCIPIA
 ZI Athéna – 215 Voie Ariane
 13705 LA CIOTAT Cedex
 Tel: + 33(0) 442 98 11 80
 Fax: + 33(0) 442 98 11 89

1 rue de la Noé
 BP 22112
 44321 NANTES Cedex 3
 Tél: + 33(0) 240 14 50 14
 Fax: + 33(0) 240 14 34 00
commercial@principia.fr

EUROPE DENMARK
 PRINCIPIA NORTH
 Kullingsgade 29
 5700 Svendborg
 Tel: +45 62 228 228
commercial@principia-north.dk


PRINCIPIA
 INNOVATIVE ENGINEERING
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www.principia.fr

ASIA MALAYSIA
 PRINCIPIA ASIA Sdn Bhd
 12th Floor, Wisma Uoa II
 21 Jalan Pinang
 50450 Kuala Lumpur Malaysia
 Tel: +6032166 0400
 HP: +65 810 130 99
business@principia-asia.com

ASIA VIETNAM
 PETROPARTNER (PRINCIPIA'S DISTRIBUTOR)
 Petroleum Partnership Company Limited
 Suite 141, 14th Floor, Ree Tower
 9 Doan Van Bo Street, Ward 12, District 4,
 Hochiminh City, Vietnam
 Tel: +84-8-38268998
 HP: +84 906898125
hanhph@petropartner.vn