Biography

Personal data

- title, name and date of birth: Ing. Jaroslav Prusa, Ph.D., born 27/05/1984
- residence: Zeiberlichova street no. 51, City of Brno, Czech Republic, EU
- family status: married, 2 children

Education

- 09/2004 – 02/2010: bachelor + master's degree of civil engineering aimed to civil structures and transportation: Brno university of Technology (title: Ing.) www.fce.vutbr.cz
  awarded by medal „Signum Prosperitas" dedicated for the best student of the year on faculty of civil engineering
- doctorate (Ph.D.): Czech technical university (CTU) in Prague, faculty of civil engineering. Doctoral thesis: Advanced analysis of structural performance of concrete arch bridges. Prague, 2017. Supervisor: Prof. Ing. Vladimir Kristek, DrSc., Ph.D., FEng., dr.h.c.

Career

- 03/2010 – 03/2014: Strasky, Husty and partners Ltd., www.shp.eu
- 04/2014 – 07/2017: LKM Consult Ltd., www.LKMconsult.cz
- 07/2017 – present: founded own structural engineering office JLP creative Ltd., www.JLPcreative.cz

- since 2013 licensed professional civil engineer in field of structural engineering and bridge engineering (member of ČKAIT – Czech Chamber of authorized engineers and technicians – stamp no. 1005987)

What I can offer you

- I'm looking for external cooperation as external structural engineer
- I am able to provide you drawings and rebar detailing for profitable prices

Others

- focus on concrete structures, prestressing construction stage analysis and nonlinear analysis (expert level) and average skills with steel structures in civil engineering
- since 2018 research in cooperation with CTU Prague and Metrostav focused on torsion of massive prismatic concrete members with concurrent other regimes of loading effects (axial tension, compression, shear and bending). Published in czech national conferences Bridges, Beton magazine

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and on Congress FIB 2018 in Melbourne: Torsion of reinforced concrete elements – behaviour and modelling. Kristek, V., Prusa, J., Vitek, J.L.. In Proceedings for the 2018 fib Congress held in Melbourne, Australia, October 7 – 11, 2018

Software skills

- Midas Civil: expert
- RFEM: advanced user, higher level
- Atena: advanced user
- Idea statica structural software: regular user
- autocad, ZWcad: user able to draw any technical drawing in 2D, rebar detailing in CAD software (expert level)
- ability to learn new SW

Strong sides

thanks for what I have achieved good references in relative young age:

- I adore structural engineering, this is my favourite hobby
- reliability
- self-control, ability to make simplified hand-made calculations for check of assembled structural FEA model to eliminate potential mistake
- high level of theoretical knowledge and good overview in structural analysis methods, materials and design codes
- ability for logical think
- skills with various types of structures – buildings, bridges, shelters, technological equipment
- high diversity - ability to solve almost anything from field of civil structures – see my references – I am able to calculate concrete bridge, building, steel roof, special steel equipment for bridge construction (MSS, launching nose, form traveller), strength analysis of vessels, nonlinear analysis of concrete members, launching bars and equipment for incrementally launched bridges, strengthening of tanks using monostrand tendons, architectural valuable steel circular stairs etc.
- very effective work process and fast thinking
- thoroughness and comprehensiveness in structural analysis
- loyalty
- ability to learn new knowledge
- ability of very precise FEA modelling and knowledge, when can be structural model simplified for the most effective design process

Spoken languages

- czech (native speaker), english (written + verbal), russian (verbal), slovak (written + verbal), german (written + verbal)

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The most significant structures – structural analysis

03/2010 – 03/2014: Strasky, Husty and partners Ltd.

Bridge JJ-217-00 on D1 Highway near town Levoča, Slovakia

Technical data:

span: 44,8m+5x65m+42,3m. Box girder 6,5 m wide with variable depth from 2,65 m to 4 m. Superstructure width 29 m (box girder + strut supported cantilevers). Used bonded, external and transversal prestressing tendons + PT bars. Very thin piers (0,7 m and 0,8 m for max. height 28,3 m above terrain). Bridge length 428,8 m. For construction was used MSS Berd. Bridge is in service since 2015.

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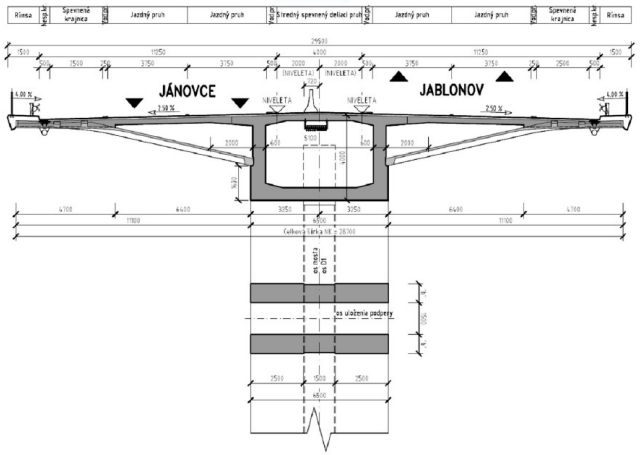

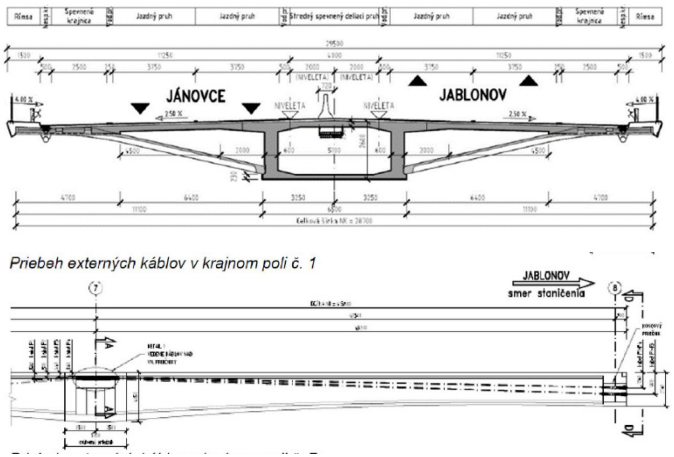

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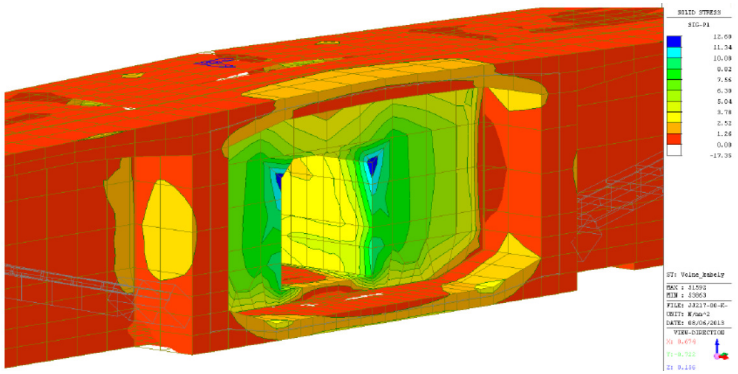
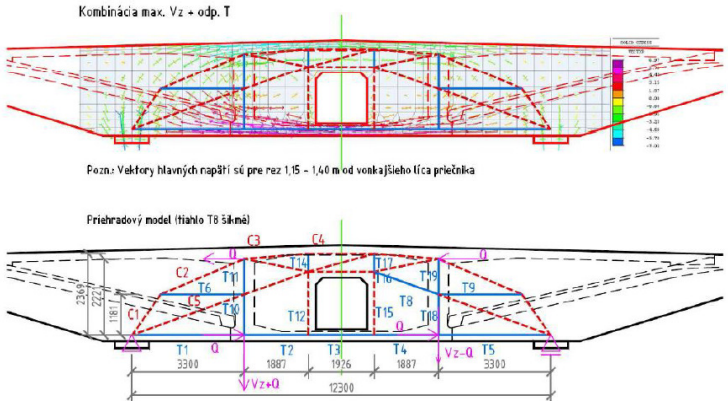
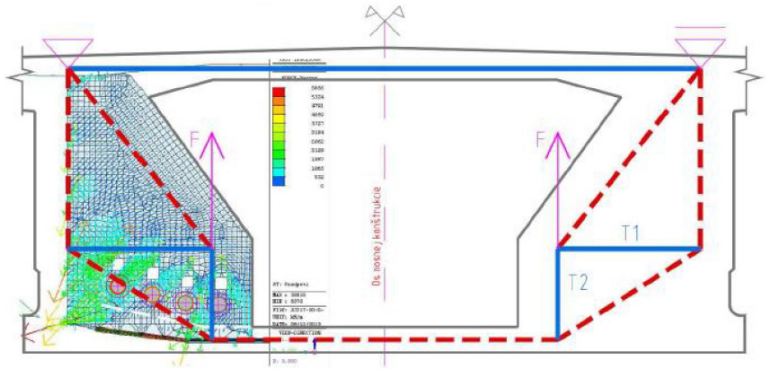
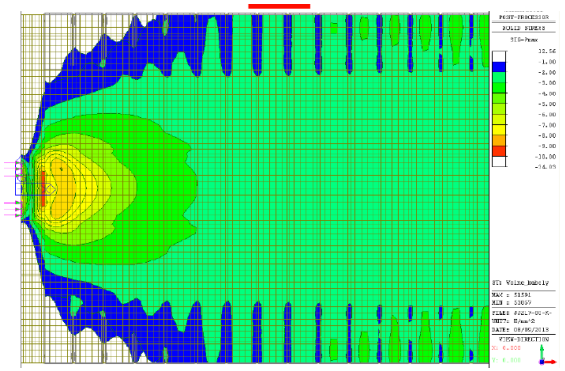
I was author of structural analysis report with more than 90% own work for superstructure and 75% on substructure design. **It was my best and the most complicated structural analysis report I ever made, I'm proud for this project.**

What was solved:
- construction stages including construction sequence of cross-section and interaction with MSS Berd
- all types of PT (bonded, external, transversal, PT bars)
- all types of structural checks including temporary construction stages checks
- detailed design of crossbeams, diaphragms, deviators (many solid element models and wall-plate models were used; SaT models based on stress vectors from wall plate and solid element models
- nonlinear calculation of substructure in linear program (hand-made reductions of sections were used based on iterative design process)









Curiosity: for substructure and foundation design was critical stadium of reconstruction of the bridge accessories (highest transversal moments)

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Bridge JJ-216-00 on D1 Highway near town Levoča, Slovakia

Technical data:

span: 49,8m+4x65m+54,8m. Box girder 6,5 m wide with variable depth from 2,65 m to 4 m. Superstructure width 29 m (box girder + strut supported cantilevers). Used bonded, external and transversal prestressing tendons + PT bars. Max. height of piers approx. 54 m above terrain).
Bridge length 480,09 m. For construction was used MSS Berd. Bridge is in service since 2015.

Bridge JJ 217-00 was first, this bridge was second in order. I was author of structural analysis report with more than 90% own work for superstructure. **It was my best and the most complicated structural analysis report I ever made, I'm proud for this project.**

What were solved:
- construction stages including construction sequence of cross-section and interaction with MSS Berd
- all types of PT (bonded, external, transversal, PT bars)
- all types of structural checks including temporary construction stages checks
- detailed design of crossbeams, diaphragms, deviators (many solid element models and wall-plate models were used; S&T models based on stress vectors from wall plate and solid element models

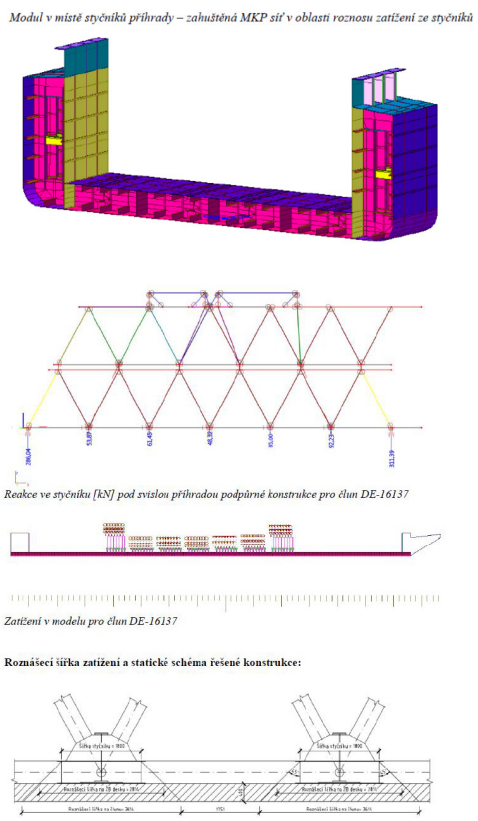
Curiosity: The highest highway bridge in Slovakia. For substructure and foundation design was critical stadium of reconstruction of the bridge accessories (highest transversal moments)

03/2017 – 07/2017: LKM consult Ltd.

Demolition of old bridge in Bratislava

LKM consult Ltd. was general designer of demolition of the bridges (road and railroad truss bridges). I was major structural engineer of demolition.

I solved in this project:
- vessel strength and stability checks (vessels Donau-Europe type, 76.5 m long)
- interaction between vessel, supporting truss structure and supported bridge superstructure
- design and alignment of supporting truss structure on vessel board due to stability and deformation
- crane operation manuals, manual of disassembling of the bridge
- anchoring ropes and pier steel anchor equipment design, continuous nonlinear calculations of forces in ropes and online checking of disassembling process



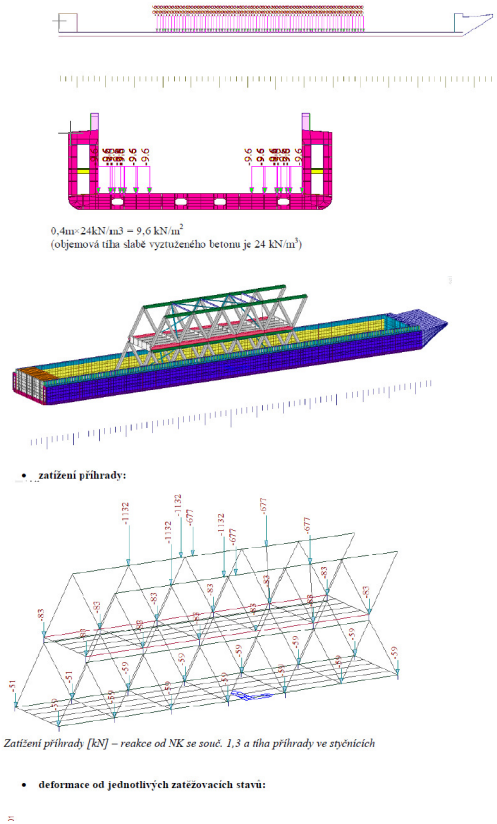


Photo: Dr. Matej Kavacký, www.imhd.sk

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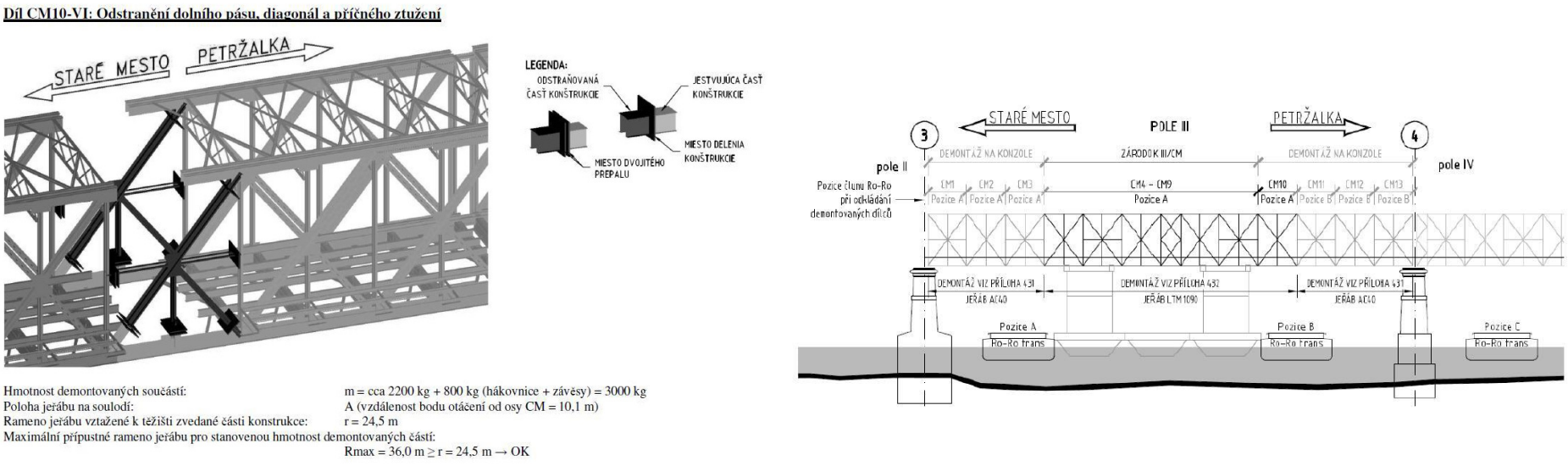


Obr. 33 Postupná demontáž dielcov (odpojovanie zárodku od konzoly)

Construction of new Old bridge in Bratislava

LKM consult Ltd. was general designer of construction of the new bridge. I was major structural engineer of construction of launching yard for incremental launching.

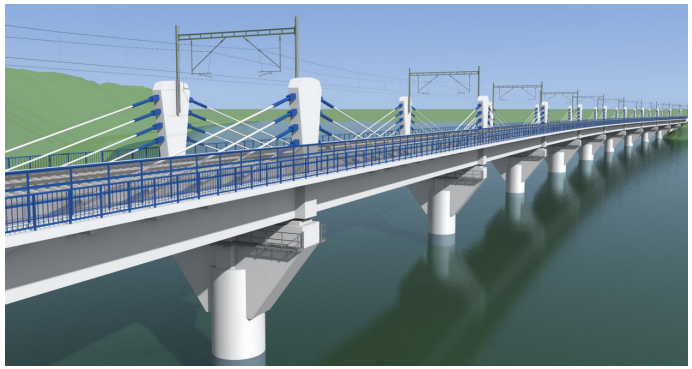
I solved in this project:
- substructure design and design of launching yard
- rebar detailing, composite concrete-steel bridges and connections for larges forces
- launching bars design for bridge launching



Nosicka dam railway extradosed 2-cell box girder bridge

my last project in LKM consult; own work 100% on substructure and more than 85% on superstructure design

Source of visualisations and pictures bellow: www.lkmconsult.cz




What was solved:
- construction stages including construction sequence of cross-section and interaction with MSS and cantilever forming traveller (2 technologies were used)
- bonded and external PT was used
- all types of structural checks including temporary construction stages checks
- detailed design of crossbeams, diaphragms, deviators (many solid element models and wall-plate models were used; S&T models based on stress vectors from wall plate and solid element models
- seismic design of substructure
- foundation pile shafts reinforcement

Curiosity: Very complicated was modelling and understanding of real behaviour of 2-cell box girder and distribution of load between walls and slabs.

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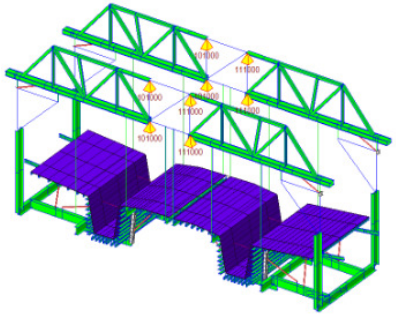
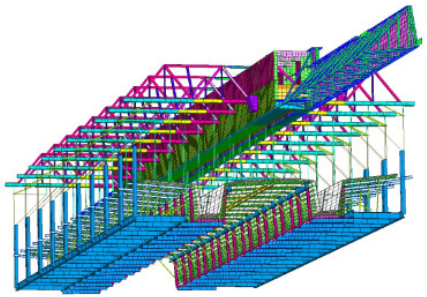
Special construction equipment for bridges

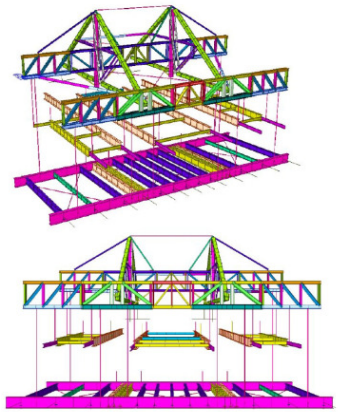
(underslung and overslung movable scaffolding system (MSS), launching noses, cantilever forming traveller, falsework)

Bridge JJ-218-00 overslung MSS:

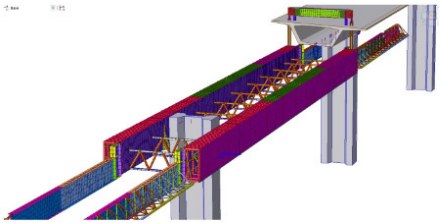


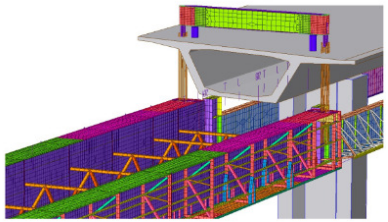


Cantilever forming traveller SO 240-00 Svrčinovec (Slovakia)

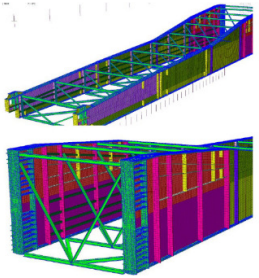


Underlung MSS - bridge SO 204 Lietavská Lúčka – Hričovské podhradie (Slovakia):





Launching nose bridge SO 201-10 Slovakia



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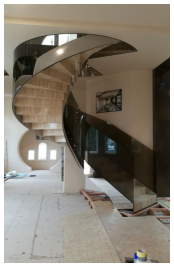
07/2017 – present: JLP creative Ltd.

Various civil structures (buildings, roofs, facades, family houses, industrial structures, precast structures, shelters), short span bridges. More at: www.JLPcreative.cz

Bus terminal in city of Holešov, Czech Republic:

Stage in city of Trenčín, Slovakia:

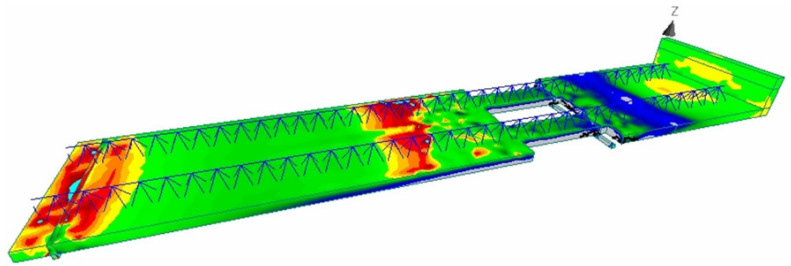

Circular steel stairways in Prague:


Brno university of technology, Czech technical university in Prague – research, Ph.D. thesis

Very complex structural model of filigree panel with simulated construction stages and comparison with load bearing test

Research of prismatic concrete members loaded by torsion with concurrent other regimes of loading – still continue. Usable especially for arch bridge design



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