"Tokamak GOLEM virtual tour" web application

HELP INDEX

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Contents

What is the "Tokamak GOLEM virtual tour" web application?

It is the 3D model, which is integrated into the web page using X3DOM technology. All 3D scene manipulations are executed by HTML tab menu, which is a part of the web page.

"Tokamak GOLEM virtual tour" web application is used for virtual exploration of tokamak GOLEM. It allows to explore the current site of the tokamak; i.e. to see two main rooms – a tokamak room and an infrastructure room (see Picture 1).

Picture 1 - Infrastructure room and tokamak GOLEM

HW and SW requirements

HW/System (optional):

Processor	Intel® Core™ i5 CPU 2 cores @ 1.9 GHz (32/64-bit OS)
Memory (RAM)	4GB
GPU/IGP	Intel® HD 4400
Graphics display resolution	1366 x 768 pixels

SW (optional):

Web Browsers (last versions with support WebGL)	Mozilla Firefox v. 4.0 (preferred)
	Google Chrome v. 9 (tested, recommended)
3D Scenes Viewer[1] (for viewing .x3d objects)	BS Contact

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[1] For viewing 3D objects, which can be found in the web application directory (e.g. http://buon.fjfi.cvut.cz/tatiana/)

Main application functions

The target of the web application is a detailed exploration of tokamak GOLEM and its infrastructure room. The first thing is helpful viewpoints (avatar standpoints) to tokamak and infrastructure room, which were programmed for easy research. The second thing is animation walks which provide more interactive virtual world exploration. The third thing is a possibility to construct tokamak by oneself and learn more about single tokamak's component.
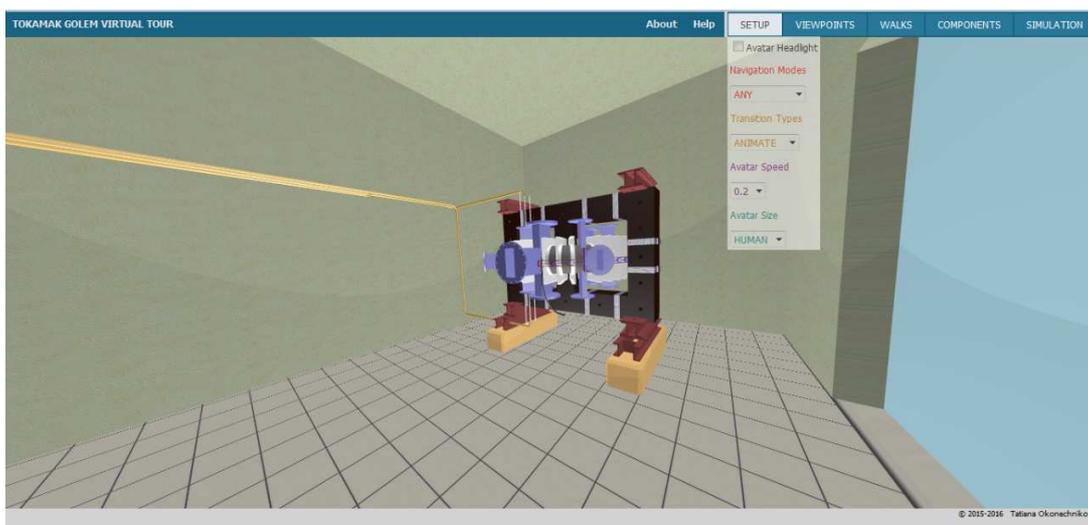
How to use the application?

There is a main tab menu in the right corner of the web page (see Picture 2). This menu is used for easy virtual world manipulation. There are 5 menu tabs.

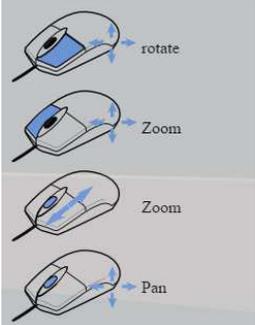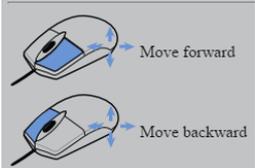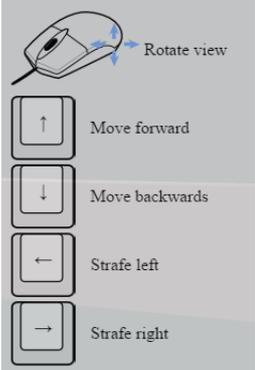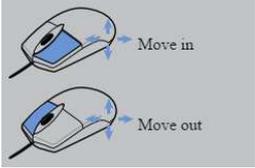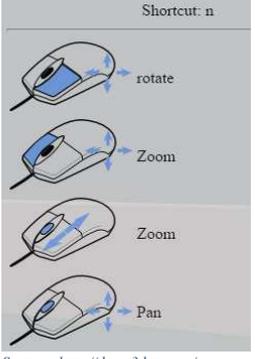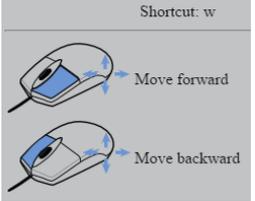*Picture 2 – Start application web page with tab menu*

Setup

The first tab is SETUP (see Picture 3). It is used for setting some basic characteristics (see Table 1).

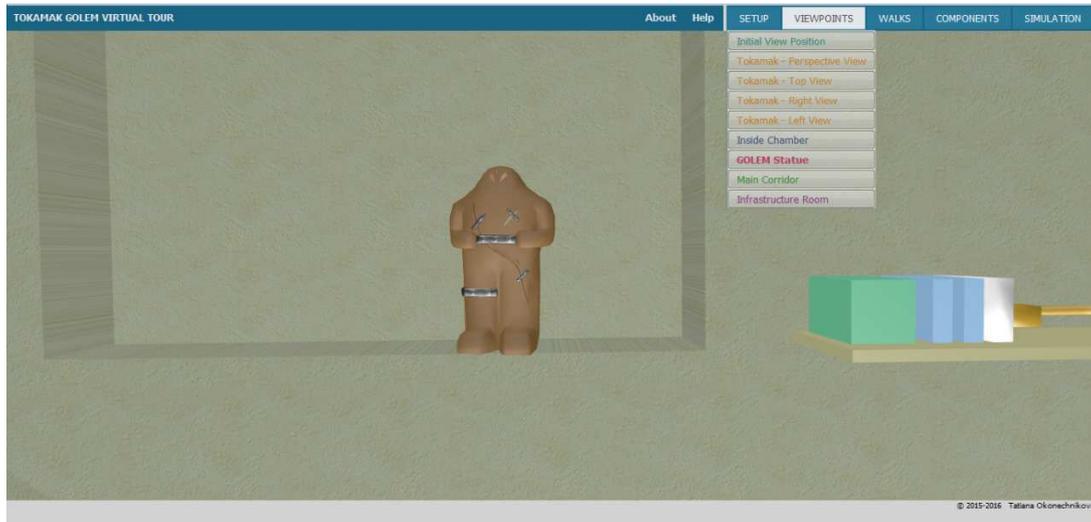*Picture 3 - SETUP tab menu with its functions*

Table 1 - SETUP basic characteristics

DESCRIPTION	
Avatar headlight	Allows to light up the way in front of the avatar
Navigation modes (defines the navigation type)	"*ANY*" allows the user to select any mode
	"*EXAMINE*" allows to rotate solitary objects *Source: http://doc.x3dom.org/*
	"*FLY*" allows zooming in, out and around *Source: http://doc.x3dom.org/*
	"*GAME*" allows navigation mode like in games *Source: http://doc.x3dom.org/*
	"*LOOK AT*" allows to select geometry of interest *Source: http://doc.x3dom.org/*
	"*NONE*" gives the user zero control of navigation

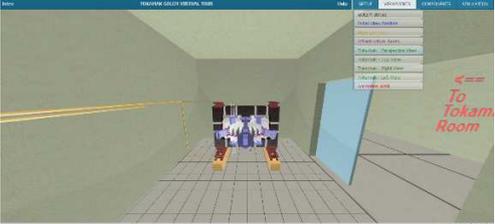|		
	"*TURNTABLE*" allows to rotate objects (same as mode "*EXAMINE*")	 *Source: http://doc.x3dom.org/*
	"*WALK*" allows walking exploration, but only on the ground	 *Source: http://doc.x3dom.org/*
Transition types (specifies a list of paradigms in which the browser moves the viewer when a new Viewpoint node is bound)	"*ANIMATE*"	a browser-specific animation effect
	"*LINEAR*"	a linear interpolation of the position and orientation values
	"*TELEPORT*"	an immediate transition without any intervening positions
Avatar speed	a rate at which the viewer travels through a scene in meters per second	
Avatar size	specifies the user's physical dimensions in the virtual world for the purpose of collision detection and terrain following	

Viewpoints

The second tab is VIEWPOINTS (see Picture 4). It is used for switching different avatar standpoints (see Table 2).

Picture 4 - VIEWPOINTS tab menu

Table 2 - Defined viewpoints

VIEWPOINTS		
Initial View Position		*Initial application standpoint to tokamak GOLEM*
Main Corridor		*Corridor leading to tokamak room (left) and to infrastructure room (right)*
Infrastructure Room		

GOLEM Statue		
Tokamak – Perspective View		*Perspective view is for the best view during the construction of the tokamak (see tab Components)*
Tokamak – Top View; Right View; Left View		*Different standpoints to tokamak*
Additional keyboard shortcuts for other viewpoint manipulations

Source: http://doc.x3dom.org/

Source: https://en.wikipedia.org/ | *<Page Up>, <Page Down> for switching between defined viewpoints* |

Walks

The third tab is WALKS. It provides animation walks for more interactive virtual world exploration (see Picture 5). Every walk lasts approximately 30-35 seconds.
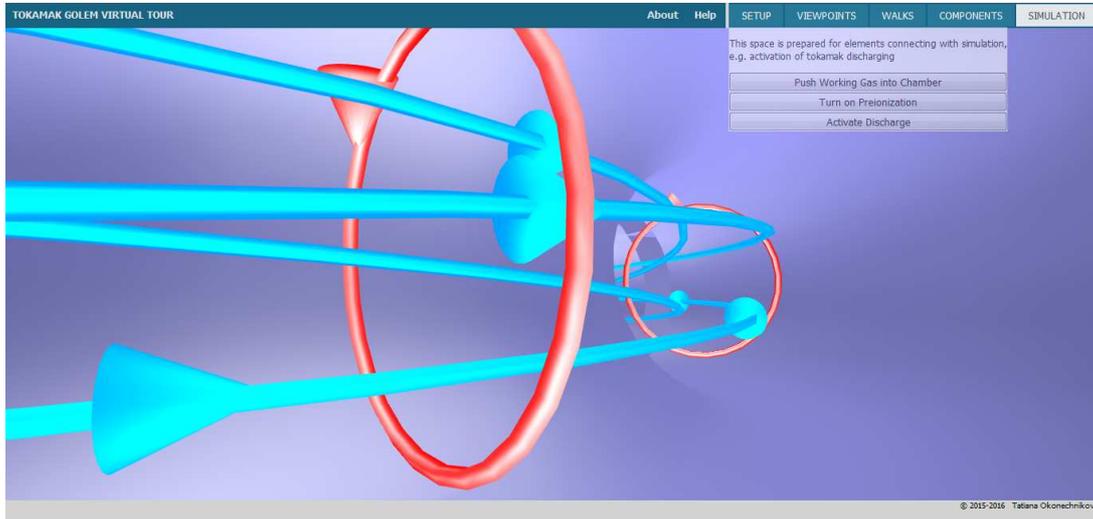

Picture 5 - WALKS tab menu

Components

The fourth tab is COMPONENTS of tokamak. It is used for construction of the tokamak by its single components by oneself (see Picture 6). The mode is also used to learn something about the chosen component by clicking on its name.

Picture 6 - COMPONENTS tab menu

Simulation

The last tab is SIMULATION (see Picture 7). It is prepared tab for future simulations, such as tokamak discharge activation.
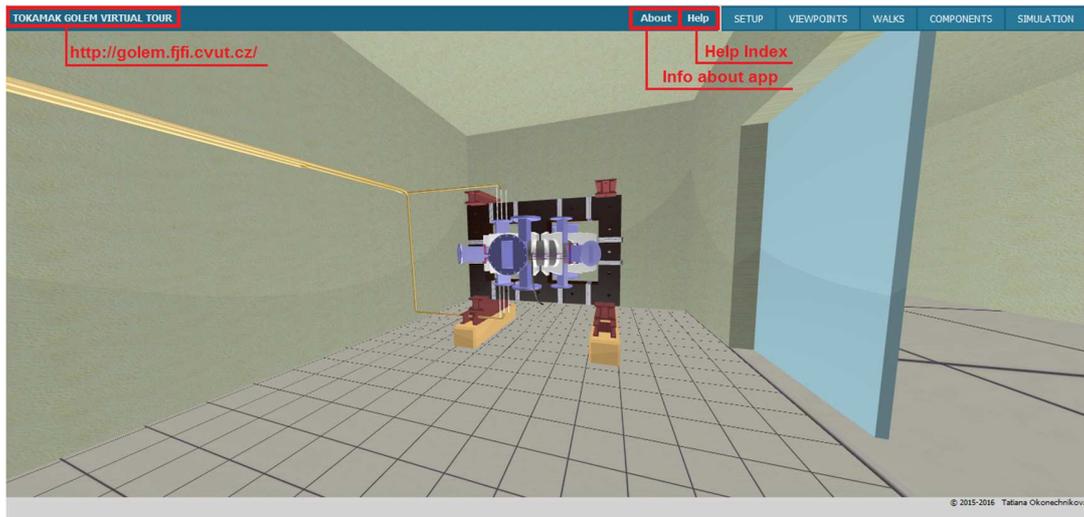

Picture 7 - Inside the tokamak's chamber

Additional information

There is also some additional information on the web page, i.e. special links (see Picture 8).

Intro	Some information about the author of the application
Tokamak	Links to the external web page http://golem.fjfi.cvut.cz/, which contains more information about tokamak GOLEM (owner: FNSPE CTU)
Help	Links to the help index (how to work with the web application)

Picture 8 - Special helpful links