

# MMD\_TOOLS LIST OF FEATURES AND BRIEF TUTORIAL INFORMATION FOR FEATURES

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mmd\_tools Blender add-on (powroupi fork) list of features:

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### 1. WHICH FILE FORMATS CAN BE IMPORTED AND EXPORTED BY NND\_TOOLS

imports: pmx, pmd, vmd, vpd - Yes

exports: pmx, vmd, vpd - Yes

imports, exports mqo - No

exports pmd - No

Ability to import .vmd morphs animation. Yes.

Ability to import .vmd bones animation. Yes.

Ability to import .vmd camera animation. Yes.

Ability to import .vmd lamp animation. Yes.

(To import a .vmd animation onto the active object, select File, Import, MikuMikuDance Motion(.vmd). If the the root/empty object of an MMD model is selected to be the active object, the .vmd animation will be imported onto all objects of the MMD model. When importing a .vmd camera animation, the active object can be either the Blender camera or its "MMD camera" empty object. If the Blender camera has no "MMD camera" empty object, an "MMD camera" empty object will automatically be created when you import the .vmd animation onto it.)

Ability to export .vmd morphs animation. Yes.

Ability to export .vmd bones animation. Yes.

Ability to export .vmd camera animation. Yes.

Ability to export .vmd lamp animation. Yes.

(To export a .vmd animation from the active model, select File, Export, MikuMikuDance Motion(.vmd). If the root/empty object of an MMD model is selected to be the active object, all animations of the MMD model, both bones animation and morphs animation, will be exported to .vmd. When exporting a .vmd camera animation, the active object can be either the Blender camera or its "MMD camera" empty object.)

Import of VMD interpolation curves. Yes.

Export of VMD interpolation curves. No.

Import of .vpd files Yes.

Export of .vpd files Yes.

### 2. MMD\_TOOLS PRESERVATION OF MODEL DATA WHEN IMPORTING AND EXPORTING

Dual/bilingual naming of PMD and PMX bones and PMX materials is preserved and will be re-exported when a previously imported PMX or PMD model is exported from Blender - Yes

Dual/bilingual naming of shape keys(morphs) is preserved and will be re-exported when a previously imported PMX or PMD model is exported from Blender - Yes (with "Morph Tools" panel)

Ability to import SDEF to, and export SDEF from, Blender. Yes.

(An imported pmx model's SDEF data is stored in 3 shape keys.)

Ability to pose and animate an imported PMX model in Blender with SDEF. Yes. (At the bottom right side of the 3D View window is the MMD SDEF Driver panel, with a [Bind] button and an [Unbind] button which you can use to enable or disable SDEF on an imported PMX model, if that model already has SDEF rigging.)

Ability to import and re-export physics objects correctly. Yes.

### 3. MMD\_TOOLS MODEL EDITING FEATURES

Imported shape keys can be edited, renamed, re-ordered and then re-exported from Blender with their data intact - Yes (with "Morph Tools" panel)

New shape keys can be added onto an MMD model - Yes

(After you create a new shape key for a mesh object, you need to add its name to the list of Vertex Morphs in the "Morph Tools" panel, if you want to export it from Blender.)

Separate a model's mesh into multiple meshes, one mesh for each material - Yes

([Separate by Materials] button. The [Join Meshes] button reverses the [Separate by Materials] operation. The Meshes Sorter panel keeps track of the order of the Materials/Meshes during these operations. You can however edit the order of Materials of a mesh object in the normal Blender way. The Materials Sorter is only needed when using older versions of Blender.)

Editing materials of a model for export to PMX - Yes

(You cannot do the material editing in the usual Blender way, though. You need to edit the mmd\_tools custom properties of a material, which are located under the Material tab of Blender's Properties Window (MMD Material panel and MMD Texture panel). When you edit the mmd\_tools custom properties, the related Blender properties will automatically be updated. When you edit the Blender properties, however, the related mmd\_tools PMX custom properties will NOT be automatically updated.)

Viewing and editing of the PMX MMD properties of a bone - Yes (MMD bone properties of the active bone can be viewed and edited under the Bone tab of the Properties Window in the MMD Bone Tools panel. When you edit the mmd\_tools custom properties, the related Blender properties will automatically be updated. When you edit the Blender properties, however, the related mmd\_tools PMX custom properties will NOT be automatically updated.)

Viewing and editing of the MMD properties of a Rigid Body or a Constraint - Yes

(Select the name of a Rigid Body or a Joint in the Rigid Body or Constraint panel of the mmd\_tools panel. The MMD properties of that Rigid Body or Joint will then appear under the Object tab of the Properties Window. When you edit the mmd\_tools custom properties, the related Blender properties will automatically be updated. When you edit the Blender properties, however, the related mmd\_tools PMX custom properties will NOT be automatically updated.)

Adding and editing physics rigid bodies and joints - Yes

(Using the Rigid Bodies panel and Joints panel of mmd\_tools. With a Rigid Body selected, its settings can be viewed and edited under the Object tab of Blender's Properties Window, in the [MMD Rigid Body] panel. With a Joint selected, its settings can be viewed and edited under the Object tab of Blender's Properties Window, in the [MMD Joint] panel.)

### 4. MMD\_TOOLS MODEL SCALING/RESIZING FEATURES

Resizing a pmd or pmx model after importing it into Blender:

You need to do that manually. Scale the root empty object, with "Individual Origins" as the center of scaling. Then apply the scale: Select Object, Apply, Scale.

Resizing a model when converting it to MMD:

You need to do that manually. Before clicking on the Convert Model button scale the armature, in Object mode, with "Individual Origins" as the center of scaling. Then apply the scale: Select Object, Apply, Scale.

Resizing a model when exporting it to PMX:

(You can set a value for the Scale export option.)

Resizing a pmd or pmx model when importing it into Blender:

(You can set a value for the Scale import option.)

You can choose a model's scale when creating it:

(Click [Create Model] button. You can set a Scale value in the dialog box which appears.)

### 5. MMD\_TOOLS MODEL DISPLAY AND RENDERING FEATURES

Correct display of an MMD model's ambient color in Blender - No (crudely approximate)

Correct display of an MMD model's toon textures in Blender - No

Correct display of an MMD model's sphere textures in Blender - Yes (except "subtract blend" type)

Ability to use .fx effects in Blender. No.

Cloning of the MMD render engine into Blender's node editors. No.

Use MMD's 10 default toon texture images after importing an MMD model into Blender - Yes

(But you need to set MikuMikuDance's Data directory as the "Shared Toon Texture Folder" for mmd\_tools in Blender's User Preferences. Then click "Save User Settings". Otherwise the imported model may appear purple in Blender.)

Convert materials for Blender's Cycles render engine - Yes

("Convert Materials for Cycles" button.)

Toggle the visibility on and off of Mesh, Armature, Rigid Bodies, Joints, Rigid Body names, Joint names, Toon Textures, Sphere Textures - Yes.

(Using the MMD Display panel, which is located on the bottom right side of the 3D View in the 3D View Properties panel)

Preview the toon edge outlines of an imported MMD model in Blender

Yes.

(In the mmd\_tools panel, under Edge Preview, click [Create] to display the toon edge outlines, click [Clean] to remove the toon edge outlines.)

### 6. MMD\_TOOLS MODEL ANIMATION FEATURES

Physics animation in Blender. Yes

(Click on the Physics [Build] button, before rendering a physics animation of the MMD model in Blender. The Physics [Clean] button reverses the Physics [Build] operation. If you want to edit the MMD model in Blender and then export it from Blender, you should not [Build] its Physics or you should [Clean] the Physics from it before exporting it.)

Editing and animating of PMX append Rotation and append Movement constraints in Blender - Yes

(Click on Bone Constraints [Apply] to create the Blender constraints which are needed to animate these append Rotation and append Movement constraints. When you import a PMX model into Blender with mmd\_tools, these constraints are automatically created, so you only need to use the Bone Constraints [Apply] button if you have edited these appends in Blender. Bone Constraints [Clean] reverses this operation and removes the Blender constraints for the PMX append Rotation and append Movement properties.)

### 7. MMD\_TOOLS MODEL CREATION AND CONVERSION FEATURES

Convert a model to an MMD model. Yes.

([Convert Model] button, with armature object selected to be the active object)

Option to use either diffuse color or mirror color as the source of the ambient color when converting a model to MMD. - Yes

(Blender materials do not have any ambient color. Blender's .obj importer and .obj exporter, and a few other add-ons store an imported object's ambient color in its mirror color.)

Create an MMD model - Yes. ([Create Model] button)

Add one or more mesh objects to the (created) MMD model - Yes

([Attach Meshes to Model] button, with the MMD model as the active object. Adds all mesh objects in the scene to the MMD model.

If you want to convert a model to MMD which has no armature:

1. Click on the mmd\_tools [Create Model] button.
2. Click on the mmd\_tools [Attach Meshes to Model] button.)

### 8. MMD\_TOOLS MODEL AUTOMATIC ERROR CORRECTION FEATURES

Automatic correction of PMX model errors - Yes, but not all errors.

(When you import a pmd or pmx model into Blender, you can choose these import options: "Clean Model", "Fix IK Links", "Remove Doubles". These import options can automatically fix some, but not all, model errors of the imported model.)

### 9. MMD\_TOOLS CAMERA FEATURES

Converting a Blender Camera to an MMD camera - Yes

(At the bottom of the Camera's Object tab in the Properties Windows is an "MMD Camera Tools" panel with a "Convert" button. What is an "MMD camera"? An MMD camera is an empty object which is parent of a Blender camera. When importing or exporting VMD camera animations, this "MMD camera" empty object is animated, instead of a Blender camera.)

Transferring a Blender Camera's animation onto an MMD camera - Yes (After clicking on the Convert button, enable the Bake Animation option.)

Transfer the Blender camera animations of the entire scene onto an MMD camera, including the animations of more than one camera. - Yes (After clicking on the Convert button, enable the Bake Animation option, and select "Scene" as the Camera Source.)

Control the MMD camera with controls similar the camera controls of MikuMikuDance. Yes. (After clicking on the Convert button, click OK and these camera controls will appear in this same "MMD Camera Tools" panel, under the camera's object tab in Blender's Properties window.)

### 10. MMD\_TOOLS SUPPORT FOR EDITING, POSING OR ANIMATING ADVANCED MORPHS (MATERIAL MORPHS, BONE POSE MORPHS, UV MORPHS, GROUP MORPHS)

The data of these morphs is preserved and will be re-exported when a previously imported PMX model is exported from Blender:

UV morphs - Yes

bone pose morphs - Yes

group morphs - Yes

material morphs - Yes

These morphs can be edited in Blender:

UV morphs - Yes

bone pose morphs - Yes

group morphs - Yes

material morphs - Yes

(The information in this tutorial tells you how to create and edit Material morphs, Group morphs, Bone morphs and UV morphs: [https://github.com/powroupi/blender\\_mmd\\_tools/wiki/How-to-create-and-edit-Material-morphs,-Group-morphs,-Bone-morphs,-UV-morphs](https://github.com/powroupi/blender_mmd_tools/wiki/How-to-create-and-edit-Material-morphs,-Group-morphs,-Bone-morphs,-UV-morphs) )

These morphs can be posed and animated in Blender:

UV morphs - Yes

bone pose morphs - Yes

group morphs - Yes

material morphs - No

(On the right side of the Morph Tools panel, click on the middle arrow button, then click [Bind] to make the morphs slider controls appear. (The [Create] menu item is only used for testing purposes.))

VMD import of animated bone pose morphs - Yes

VMD import of animated UV morphs - Yes

VMD import of animated group morphs - Yes

VMD import of animated Material morphs - No

VMD export of animated bone pose morphs - Yes

VMD export of animated UV morphs - Yes

VMD export of animated group morphs - Yes

VMD export of animated Material morphs - No

### 11. MMD\_TOOLS MODEL JAPANESE TO ENGLISH TRANSLATION FEATURES

Mass translation and adding of English names to an MMD model. Yes. (Translation button)