

pprint.pprint(proj.__dict__)

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B/settings/mH_Project_A-B_project.json'),
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'info': {'dir_info': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/settings/mH_Project_A-B_project.json'),
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pprint.pprint(organ.__dict__)

user_organName

'LS52_F02_V_SR_1029'

parent_project

<src.modules.mH_classes.Project object at 0x000001ED452B8DC0>

info

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{'custom_angle': 0,
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JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/settings/mH_Project_A-B_project.json'),
 'mH': 'mH_Proj-202301301042',
 'user': 'Project_A-B'},
 'resolution': [0.22832596445005054, 0.22832596445005054, 0.652961],
 'stage': '72-74hpf',
 'strain': 'myl7:lifeActGFP, fli1a:AcTag-RFP',
 'units_resolution': ['um', 'um', 'um'],
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 'user_organNotes': 'Wild-type heart 1'}
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info_loadCh

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02_V_SR_1029/LS52_F02_V_SR_1029_ch0_EDC.tif'),
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 'mask_ch': True},
 'ch2': {'dir_cho': WindowsPath('D:/Documents
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mH_organName

'mH_Organ-202301301042'

settings

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JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/LS52_F02_V_SR_1029_2A/Im_LS52_F
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JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/LS52_F02_V_SR_1029_2A/Im_LS52_F
02_V_SR_1029/LS52_F02_V_SR_1029_ch1_EDC.tif'),
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'csv_all': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/csv_all'),
'imgs_videos': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/imgs_videos'),
'meshes': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/meshes'),
's3_numpy': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy'),
'settings': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/settings')}}

```

workflow

```

{'ImProc': {'Status': 'Initialised',
'ch1': {'A-MaskChannel': {'Status': 'DONE'},
        'B-CloseCont': {'Status': 'DONE',
        'Steps': {'A-Autom': {'Status': 'DONE'},
                  'B-Manual': {'Status': 'DONE'},
                  'C-CloseInOut': {'Status': 'DONE'}}},
        'C-SelectCont': {'Status': 'DONE'},
        'D-S3Create': {'Info': {'ext': {'Status': 'DONE'},
                                'int': {'Status': 'DONE'},
                                'tiss': {'Status': 'DONE'}},
                        'Status': 'DONE'},
        'E-TrimS3': {'Info': {'ext': {'Status': 'NotInitialised'},
                                'int': {'Status': 'NotInitialised'},
                                'tiss': {'Status': 'NotInitialised'}},
                     'Planes': {},
                     'Status': 'NotInitialised'},
        'Status': 'Initialised'},
'ch2': {'A-MaskChannel': {'Status': 'DONE'},
        'B-CloseCont': {'Status': 'DONE',
        'Steps': {'A-Autom': {'Status': 'DONE'},
                  'B-Manual': {'Status': 'DONE'},
                  'C-CloseInOut': {'Status': 'DONE'}}},
        'C-SelectCont': {'Status': 'DONE'},
        'D-S3Create': {'Info': {'ext': {'Status': 'DONE'},
                                'int': {'Status': 'DONE'},
                                'tiss': {'Status': 'DONE'}},
                        'Status': 'DONE'},
        'E-CleanCh': {'Info': {'ext': {'Status': 'DONE'},
                                'int': {'Status': 'DONE'},
                                'tiss': {'Status': 'DONE'}},
                       'Status': 'DONE'},
        'E-TrimS3': {'Info': {'ext': {'Status': 'NotInitialised'},
                                'int': {'Status': 'NotInitialised'},
                                'tiss': {'Status': 'NotInitialised'}},
                     'Planes': {},
                     'Status': 'NotInitialised'},
        'Status': 'NotInitialised'},

```

```

        'Status': 'Initialised'},
    'chNS': {'D-S3Create': {'Settings': {'ext_mesh': ('ch1', 'int'),
        'int_mesh': ('ch2', 'ext')},
        'Status': 'NotInitialised'},
        'Status': 'NotInitialised'}}},
    'MeshesProc': {'A-Create3DMesh': {'Status': 'NotInitialised',
        'ch1': {'ext': {'Status': 'DONE',
            'keep_largest': False,
            'stack_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch1_ext.npy')},
            'int': {'Status': 'DONE',
                'keep_largest': False,
                'stack_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch1_int.npy')},
            'tiss': {'Status': 'DONE',
                'keep_largest': False,
                'stack_dir': WindowsPath('D:/Documents
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B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch1_tiss.npy')}},
            'ch2': {'ext': {'Status': 'DONE',
                'keep_largest': False,
                'stack_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch2_ext.npy')},
            'int': {'Status': 'DONE',
                'keep_largest': False,
                'stack_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch2_int.npy')},
            'tiss': {'Status': 'DONE',
                'keep_largest': False,
                'stack_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch2_tiss.npy')}},
            'chNS': {'keep_largest': False}},
    'B-TrimMesh': {'Status': 'NotInitialised',
        'ch1': {'ext': {'Status': 'NotInitialised',
            'keep_largest': None,
            'stack_dir': None,
            'trim_settings': {'no_cuts': 0}},
            'int': {'Status': 'NotInitialised',
                'keep_largest': None,
                'stack_dir': None,
                'trim_settings': {'no_cuts': 0}},
            'tiss': {'Status': 'NotInitialised',
                'keep_largest': False,
                'stack_dir': None,
                'trim_settings': {'no_cuts': 0}}},
            'ch2': {'ext': {'Status': 'NotInitialised',
                'keep_largest': None,
                'stack_dir': None,
                'trim_settings': {'no_cuts': 0}},
            'int': {'Status': 'NotInitialised',
                'keep_largest': None,
                'stack_dir': None,
                'trim_settings': {'no_cuts': 0}},
            'tiss': {'Status': 'NotInitialised',
                'keep_largest': False,

```

```

        'stack_dir': None,
        'trim_settings': {'no_cuts': 0}},
'C-Centreline': {'Status': 'NotInitialised',
    'ch1': {'ext': {'Status': 'NotInitialised',
        'connect_cl': {'Settings': 'NotInitialised',
            'Status': 'NotInitialised'},
        'dir_cleanMesh': None,
        'dir_meshLabMesh': None,
        'measure': {'Status': 'NotInitialised',
            'parameters': []},
        'vmtk_cl': {'Status': 'NotInitialised',
            'vmtktxt': 'NotInitialised'}},
    'int': {'Status': 'NotInitialised',
        'connect_cl': {'Settings': 'NotInitialised',
            'Status': 'NotInitialised'},
        'dir_cleanMesh': None,
        'dir_meshLabMesh': None,
        'measure': {'Status': 'NotInitialised',
            'parameters': []},
        'vmtk_cl': {'Status': 'NotInitialised',
            'vmtktxt': 'NotInitialised'}},
    'tiss': {'Status': 'NotInitialised',
        'connect_cl': {'Settings': 'NotInitialised',
            'Status': 'NotInitialised'},
        'dir_cleanMesh': None,
        'dir_meshLabMesh': None,
        'measure': {'Status': 'NotInitialised',
            'parameters': []},
        'vmtk_cl': {'Status': 'NotInitialised',
            'vmtktxt': 'NotInitialised'}}},
'ch2': {'ext': {'Status': 'NotInitialised',
    'connect_cl': {'Settings': 'NotInitialised',
        'Status': 'NotInitialised'},
    'dir_cleanMesh': None,
    'dir_meshLabMesh': None,
    'measure': {'Status': 'NotInitialised',
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    'vmtk_cl': {'Status': 'NotInitialised',
        'vmtktxt': 'NotInitialised'}},
    'int': {'Status': 'NotInitialised',
        'connect_cl': {'Settings': 'NotInitialised',
            'Status': 'NotInitialised'},
        'dir_cleanMesh': None,
        'dir_meshLabMesh': None,
        'measure': {'Status': 'NotInitialised',
            'parameters': []},
        'vmtk_cl': {'Status': 'NotInitialised',
            'vmtktxt': 'NotInitialised'}},
    'tiss': {'Status': 'NotInitialised',
        'connect_cl': {'Settings': 'NotInitialised',
            'Status': 'NotInitialised'},
        'dir_cleanMesh': None,
        'dir_meshLabMesh': None,
        'measure': {'Status': 'NotInitialised',
            'parameters': []},
        'vmtk_cl': {'Status': 'NotInitialised',
            'vmtktxt': 'NotInitialised'}}}},
'D-Ballooning': {'Status': 'NotInitialised',
    'ch1': {'int': {'Settings': {'from_cl': 'ch2',
        'from_cl_type': 'int'},

```

```

        'Status': 'NotInitialised'}},
    'ch2': {'ext': {'Settings': {'from_cl': 'ch2',
        'from_cl_type': 'ext'},
        'Status': 'NotInitialised'}}},
    'D-Thickness_ext>int': {'Status': 'NotInitialised'},
    'D-Thickness_int>ext': {'Status': 'NotInitialised',
        'ch1': {'tiss': {'Parameters': {'actual_values': {'max_val': None,
            'min_val': None}},
            'Status': 'NotInitialised'}},
        'ch2': {'tiss': {'Parameters': {'actual_values': {'max_val': None,
            'min_val': None}},
            'Status': 'NotInitialised'}},
        'chNS': {'tiss': {'Parameters': {'actual_values': {'max_val': None,
            'min_val': None}},
            'Status': 'NotInitialised'}}},
    'E-Segments': {'Status': 'NotInitialised',
        'ch1': {'ext': {'Segments': {'segm1': {'Status': 'NotInitialised',
            'measure': {'Status': 'NotInitialised',
                'parameters': []}},
            'segm2': {'Status': 'NotInitialised',
                'measure': {'Status': 'NotInitialised',
                    'parameters': []}},
            'whole': {'Status': 'NotInitialised',
                'measure': {'Status': 'NotInitialised',
                    'parameters': []}}},
            'Status': 'NotInitialised'}},
        'ch2': {'int': {'Segments': {'segm1': {'Status': 'NotInitialised',
            'measure': {'Status': 'NotInitialised',
                'parameters': []}},
            'segm2': {'Status': 'NotInitialised',
                'measure': {'Status': 'NotInitialised',
                    'parameters': []}},
            'whole': {'Status': 'NotInitialised',
                'measure': {'Status': 'NotInitialised',
                    'parameters': []}}},
            'Status': 'NotInitialised'}},
        'chNS': {'tiss': {'Segments': {'segm1': {'Status': 'NotInitialised',
            'measure': {'Status': 'NotInitialised',
                'parameters': []}},
            'segm2': {'Status': 'NotInitialised',
                'measure': {'Status': 'NotInitialised',
                    'parameters': []}},
            'whole': {'Status': 'NotInitialised',
                'measure': {'Status': 'NotInitialised',
                    'parameters': []}}},
            'Status': 'NotInitialised'}}},
    'Status': 'NotInitialised'}}

```

imChannels

```

{'ch1': {'ch_relation': 'external',
    'channel_no': 'ch1',
    'contStack': {'ext': {'cont_name': 'ch1_ext',
        'cont_type': 'ext',
        'imfilled_name': 'imExtFilledCont',
        'process': ['Init',
            'Loaded',
            'Loaded',
            'Loaded',
            'Loaded']},

```

```

's3_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch1_ext.npy'),
's3_file': 'LS52_F02_V_SR_1029_s3_ch1_ext.npy',
'shape_s3': (288, 892, 894)),
'int': {'cont_name': 'ch1_int',
'cont_type': 'int',
'imfilled_name': 'imIntFilledCont',
'process': ['Init',
'Loaded',
'Loaded',
'Loaded',
'Loaded'],
's3_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch1_int.npy'),
's3_file': 'LS52_F02_V_SR_1029_s3_ch1_int.npy',
'shape_s3': (288, 892, 894)),
'tiss': {'cont_name': 'ch1_tiss',
'cont_type': 'tiss',
'imfilled_name': 'imAllFilledCont',
'process': ['Init',
'Loaded',
'Loaded',
'Loaded',
'Loaded'],
's3_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch1_tiss.npy'),
's3_file': 'LS52_F02_V_SR_1029_s3_ch1_tiss.npy',
'shape_s3': (288, 892, 894))},
'dir_cho': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/LS52_F02_V_SR_1029_2A/Im_LS52_F
02_V_SR_1029/LS52_F02_V_SR_1029_ch0_EDC.tif'),
'dir_mk': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/LS52_F02_V_SR_1029_2A/Im_LS52_F
02_V_SR_1029/LS52_F02_V_SR_1029_ch0_mask.tif'),
'dir_stckproc': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_StckProc_ch1.npy'),
'masked': True,
'parent_organ_name': 'LS52_F02_V_SR_1029',
'process': ['Init',
'Masked',
'ClosedCont-Auto',
'ClosedCont-Manual',
'ClosedInfOutf',
'SelectCont',
'CreateS3',
'LoadS3',
'LoadS3',
'LoadS3',
'LoadS3'],
'resolution': [0.22832596445005054, 0.22832596445005054, 0.652961],
'shape': (288, 892, 892),
'shape_s3': (288, 892, 894),
'to_mask': True,
'user_chName': 'myocardium'},
'ch2': {'ch_relation': 'internal',
'channel_no': 'ch2',

```

```

'contStack': {'ext': {'cont_name': 'ch2_ext',
                    'cont_type': 'ext',
                    'imfilled_name': 'imExtFilledCont',
                    'process': ['Init',
                                'Loaded',
                                'Loaded',
                                'Loaded',
                                'Loaded'],
                    's3_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch2_ext.npy'),
                    's3_file': 'LS52_F02_V_SR_1029_s3_ch2_ext.npy',
                    'shape_s3': (288, 892, 894)},
'int': {'cont_name': 'ch2_int',
        'cont_type': 'int',
        'imfilled_name': 'imIntFilledCont',
        'process': ['Init',
                    'Loaded',
                    'Loaded',
                    'Loaded',
                    'Loaded'],
        's3_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch2_int.npy'),
        's3_file': 'LS52_F02_V_SR_1029_s3_ch2_int.npy',
        'shape_s3': (288, 892, 894)},
'tiss': {'cont_name': 'ch2_tiss',
         'cont_type': 'tiss',
         'imfilled_name': 'imAllFilledCont',
         'process': ['Init',
                    'Loaded',
                    'Loaded',
                    'Loaded',
                    'Loaded'],
         's3_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch2_tiss.npy'),
         's3_file': 'LS52_F02_V_SR_1029_s3_ch2_tiss.npy',
         'shape_s3': (288, 892, 894)},
'dir_cho': WindowsPath('D:/Documents
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02_V_SR_1029/LS52_F02_V_SR_1029_ch1_EDC.tif'),
'dir_mk': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/LS52_F02_V_SR_1029_2A/Im_LS52_F
02_V_SR_1029/LS52_F02_V_SR_1029_ch1_mask.tif'),
'dir_stckproc': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_StckProc_ch2.npy'),
'masked': True,
'parent_organ_name': 'LS52_F02_V_SR_1029',
'process': ['Init',
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            'ClosedCont-Auto',
            'ClosedCont-Manual',
            'ClosedInfOutf',
            'SelectCont',
            'CreateS3',
            'LoadS3',
            'LoadS3',
            'LoadS3',
            'LoadS3',

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```

        'LoadS3'],
        'resolution': [0.22832596445005054, 0.22832596445005054, 0.652961],
        'shape': (288, 892, 892),
        'shape_s3': (288, 892, 894),
        'to_mask': True,
        'user_chName': 'endocardium'}}

obj_imChannels
{'ch1': <src.modules.mH_classes.ImChannel object at 0x000001ED452B8F40>,
 'ch2': <src.modules.mH_classes.ImChannel object at 0x000001ED45390A00>}

meshes
{'ch1_ext': {'alpha': 1,
             'channel_no': 'ch1',
             'color': 'gold',
             'dir_out': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/meshes/LS52_F02_V_SR_1029_myocardium_ext.vtk'),
             'legend': 'myocardium_ext',
             'mesh_type': 'ext',
             'name': 'ch1_ext',
             'parent_organ': 'LS52_F02_V_SR_1029',
             'resolution': [0.22832596445005054, 0.22832596445005054, 0.652961],
             'user_meshName': 'myocardium'},
 'ch1_int': {'alpha': 1,
             'channel_no': 'ch1',
             'color': 'crimson',
             'dir_out': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/meshes/LS52_F02_V_SR_1029_myocardium_int.vtk'),
             'legend': 'myocardium_int',
             'mesh_type': 'int',
             'name': 'ch1_int',
             'parent_organ': 'LS52_F02_V_SR_1029',
             'resolution': [0.22832596445005054, 0.22832596445005054, 0.652961],
             'user_meshName': 'myocardium'},
 'ch1_tiss': {'alpha': 1,
             'channel_no': 'ch1',
             'color': 'lightseagreen',
             'dir_out': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/meshes/LS52_F02_V_SR_1029_myocardium_tiss.vtk'),
             'legend': 'myocardium_tiss',
             'mesh_type': 'tiss',
             'name': 'ch1_tiss',
             'parent_organ': 'LS52_F02_V_SR_1029',
             'resolution': [0.22832596445005054,
                           0.22832596445005054,
                           0.652961],
             'user_meshName': 'myocardium'},
 'ch2_ext': {'alpha': 1,
             'channel_no': 'ch2',
             'color': 'deepskyblue',
             'dir_out': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/meshes/LS52_F02_V_SR_1029_endocardium_ext.vtk'),
             'legend': 'endocardium_ext',
             'mesh_type': 'ext',
             'name': 'ch2_ext',
             'parent_organ': 'LS52_F02_V_SR_1029',

```



```

        'resolution': [0.22832596445005054, 0.22832596445005054, 0.652961],
        'user_meshName': 'endocardium'},
    'ch2_int': {'alpha': 1,
        'channel_no': 'ch2',
        'color': 'deeppink',
        'dir_out': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/meshes/LS52_F02_V_SR_1029_endocardium_int.vtk'),
        'legend': 'endocardium_int',
        'mesh_type': 'int',
        'name': 'ch2_int',
        'parent_organ': 'LS52_F02_V_SR_1029',
        'resolution': [0.22832596445005054, 0.22832596445005054, 0.652961],
        'user_meshName': 'endocardium'},
    'ch2_tiss': {'alpha': 1,
        'channel_no': 'ch2',
        'color': 'darkmagenta',
        'dir_out': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/meshes/LS52_F02_V_SR_1029_endocardium_tiss.vtk'),
        'legend': 'endocardium_tiss',
        'mesh_type': 'tiss',
        'name': 'ch2_tiss',
        'parent_organ': 'LS52_F02_V_SR_1029',
        'resolution': [0.22832596445005054,
            0.22832596445005054,
            0.652961],
        'user_meshName': 'endocardium'}}}

```

obj_meshtes

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{'ch1_ext': <src.modules.mH_classes.Mesh_mH object at 0x000001ED1F1E89A0>,
 'ch1_int': <src.modules.mH_classes.Mesh_mH object at 0x000001ED47CAC370>,
 'ch1_tiss': <src.modules.mH_classes.Mesh_mH object at 0x000001ED47B67C40>,
 'ch2_ext': <src.modules.mH_classes.Mesh_mH object at 0x000001ED47B79EE0>,
 'ch2_int': <src.modules.mH_classes.Mesh_mH object at 0x000001ED535C4CD0>,
 'ch2_tiss': <src.modules.mH_classes.Mesh_mH object at 0x000001ED47CD42B0>}

```

objects

```
{}
```

dir_res

```

WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029')

```

dir_info

```

WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/settings/mH_LS52_F02_V_SR_1029_organ.json')

```

pprint.pprint(im_ch1.__dict__)

```

{'ch_relation': 'external',
 'channel_no': 'ch1',
 'contStack': {'ext': {'cont_name': 'ch1_ext',
    'cont_type': 'ext',
    'imfilled_name': 'imExtFilledCont',
    'process': ['Init',
        'Loaded',
        'Loaded',
        'Loaded',

```

```

        'Loaded'],
        's3_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch1_ext.npy'),
        's3_file': 'LS52_F02_V_SR_1029_s3_ch1_ext.npy',
        'shape_s3': (288, 892, 894)),
        'int': {'cont_name': 'ch1_int',
        'cont_type': 'int',
        'imfilled_name': 'imIntFilledCont',
        'process': ['Init',
        'Loaded',
        'Loaded',
        'Loaded',
        'Loaded'],
        's3_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch1_int.npy'),
        's3_file': 'LS52_F02_V_SR_1029_s3_ch1_int.npy',
        'shape_s3': (288, 892, 894)),
        'tiss': {'cont_name': 'ch1_tiss',
        'cont_type': 'tiss',
        'imfilled_name': 'imAllFilledCont',
        'process': ['Init',
        'Loaded',
        'Loaded',
        'Loaded',
        'Loaded'],
        's3_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch1_tiss.npy'),
        's3_file': 'LS52_F02_V_SR_1029_s3_ch1_tiss.npy',
        'shape_s3': (288, 892, 894))},
        'dir_cho': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/LS52_F02_V_SR_1029_2A/Im_LS52_F
02_V_SR_1029/LS52_F02_V_SR_1029_ch0_EDC.tif'),
        'dir_mk': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/LS52_F02_V_SR_1029_2A/Im_LS52_F
02_V_SR_1029/LS52_F02_V_SR_1029_ch0_mask.tif'),
        'dir_stckproc': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_StckProc_ch1.npy'),
        'masked': True,
        'parent_organ': <src.modules.mH_classes.Organ object at 0x000001ED4539E070>,
        'parent_organ_name': 'LS52_F02_V_SR_1029',
        'process': ['Init',
        'Masked',
        'ClosedCont-Auto',
        'ClosedCont-Manual',
        'ClosedInfOutf',
        'SelectCont',
        'CreateS3',
        'LoadS3',
        'LoadS3',
        'LoadS3',
        'LoadS3'],
        'resolution': [0.22832596445005054, 0.22832596445005054, 0.652961],
        's3_ext': <src.modules.mH_classes.ContStack object at 0x000001ED47BAD970>,
        's3_int': <src.modules.mH_classes.ContStack object at 0x000001ED47CAC2B0>,
        's3_tiss': <src.modules.mH_classes.ContStack object at 0x000001ED1F1E8970>,
        'shape': (288, 892, 892),

```

```
'shape_s3': (288, 892, 894),
'to_mask': True,
'user_chName': 'myocardium'}
```

pprint.pprint(im_ch2.__dict__)

```
{'ch_relation': 'internal',
'channel_no': 'ch2',
'contStack': {'ext': {'cont_name': 'ch2_ext',
'cont_type': 'ext',
'imfilled_name': 'imExtFilledCont',
'process': ['Init',
'Loaded',
'Loaded',
'Loaded',
'Loaded'],
's3_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch2_ext.npy'),
's3_file': 'LS52_F02_V_SR_1029_s3_ch2_ext.npy',
'shape_s3': (288, 892, 894)},
'int': {'cont_name': 'ch2_int',
'cont_type': 'int',
'imfilled_name': 'imIntFilledCont',
'process': ['Init',
'Loaded',
'Loaded',
'Loaded',
'Loaded'],
's3_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch2_int.npy'),
's3_file': 'LS52_F02_V_SR_1029_s3_ch2_int.npy',
'shape_s3': (288, 892, 894)},
'tiss': {'cont_name': 'ch2_tiss',
'cont_type': 'tiss',
'imfilled_name': 'imAllFilledCont',
'process': ['Init',
'Loaded',
'Loaded',
'Loaded',
'Loaded'],
's3_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch2_tiss.npy'),
's3_file': 'LS52_F02_V_SR_1029_s3_ch2_tiss.npy',
'shape_s3': (288, 892, 894)}},
'dir_cho': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/LS52_F02_V_SR_1029_2A/Im_LS52_F
02_V_SR_1029/LS52_F02_V_SR_1029_ch1_EDC.tif'),
'dir_mk': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/LS52_F02_V_SR_1029_2A/Im_LS52_F
02_V_SR_1029/LS52_F02_V_SR_1029_ch1_mask.tif'),
'dir_stckproc': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_StckProc_ch2.npy'),
'masked': True,
'parent_organ': <src.modules.mH_classes.Organ object at 0x000001ED4539E070>,
'parent_organ_name': 'LS52_F02_V_SR_1029',
'process': ['Init',
'Masked',
```

```

'ClosedCont-Auto',
'ClosedCont-Manual',
'ClosedInfOutf',
'SelectCont',
'CreateS3',
'LoadS3',
'LoadS3',
'LoadS3',
'LoadS3'],
'resolution': [0.22832596445005054, 0.22832596445005054, 0.652961],
's3_ext': <src.modules.mH_classes.ContStack object at 0x000001ED4537BC40>,
's3_int': <src.modules.mH_classes.ContStack object at 0x000001ED47B67040>,
's3_tiss': <src.modules.mH_classes.ContStack object at 0x000001ED452B8BE0>,
'shape': (288, 892, 892),
'shape_s3': (288, 892, 894),
'to_mask': True,
'user_chName': 'endocardium'}

```

pprint.pprint(im_ch1.s3_ext.__dict__)

```

{'cont_name': 'ch1_ext',
'cont_type': 'ext',
'im_channel': <src.modules.mH_classes.ImChannel object at 0x000001ED452B8F40>,
'imfilled_name': 'imExtFilledCont',
'process': ['Init', 'Loaded', 'Loaded', 'Loaded', 'Loaded'],
's3_dir': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/s3_numpy/LS52_F02_V_SR_1029_s3_ch1_ext.npy'),
's3_file': 'LS52_F02_V_SR_1029_s3_ch1_ext.npy',
'shape_s3': (892, 892, 290)}

```

pprint.pprint(msh1_ext.__dict__)

```

{'alpha': 1,
'channel_no': 'ch1',
'color': 'gold',
'dir_out': WindowsPath('D:/Documents
JSP/Dropbox/Dropbox_Juliana/PhD_Thesis/Data_ongoing/LS_ongoing/A_LS_Analysis/im_morphoHeart/R_Project_A-
B/LS52_F02_V_SR_1029/meshes/LS52_F02_V_SR_1029_myocardium_ext.vtk'),
'imChannel': <src.modules.mH_classes.ImChannel object at 0x000001ED452B8F40>,
'legend': 'myocardium_ext',
'mesh': <Mesh(0x000001ED21F952A0) at 0x000001ED47C9B280>,
'mesh_type': 'ext',
'name': 'ch1_ext',
'parent_organ': <src.modules.mH_classes.Organ object at 0x000001ED4539E070>,
'resolution': [0.22832596445005054, 0.22832596445005054, 0.652961],
'user_meshName': 'myocardium'}

```