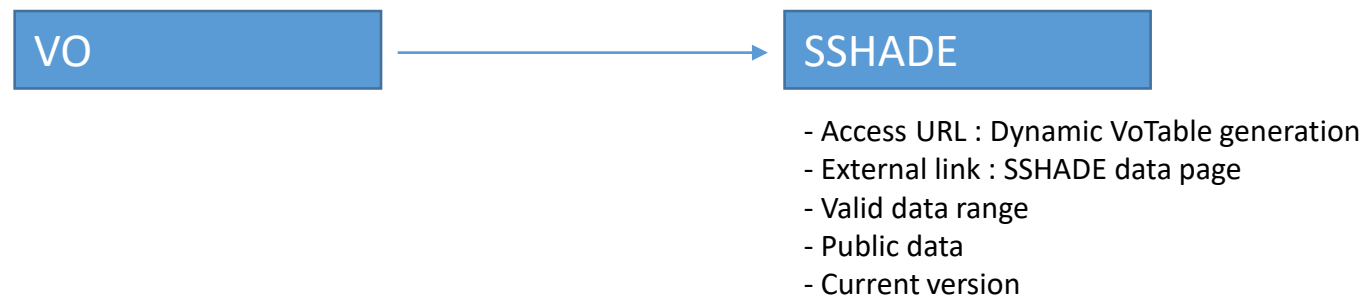
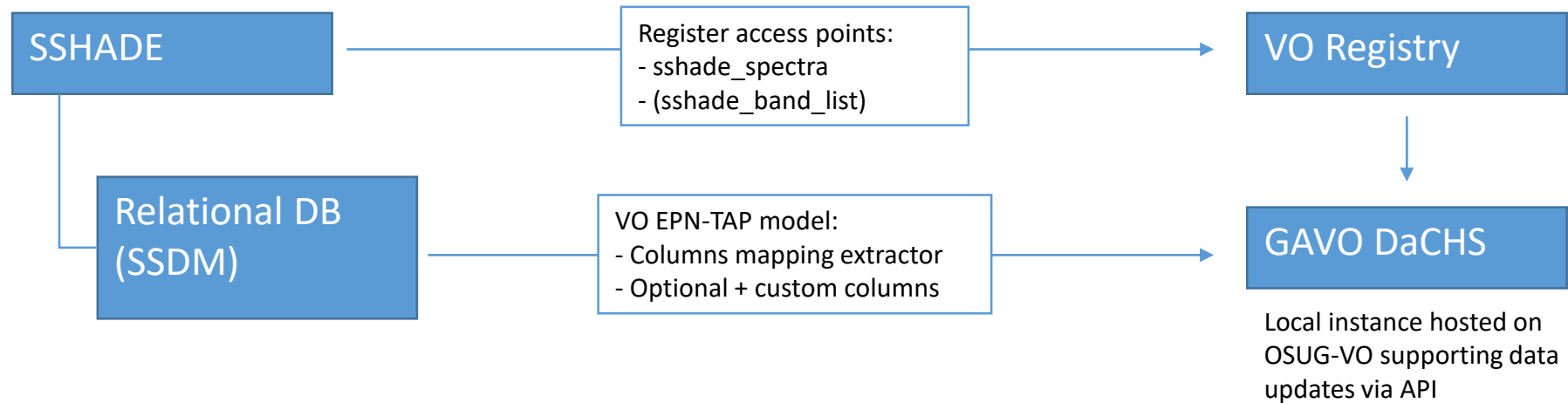


SSHADE VO Implementation

& OSUG-VO

SSHAD-VO



GAVO DaCHS q.rd schema definition

```
<resource schema="sshade_spectra">
  <meta name="title">SSHADe spectra library</meta>
  <meta name="description" format="plain">
    SSHADe spectra library.
  </meta>
  <meta name="creationDate">2017-07-12T00:00:00</meta>
  <meta name="subject">spectroscopy</meta>
  <meta name="creator">Schmitt, B.: et al</meta>
  <meta name="subject">Catalogs</meta>
  <meta name="subject">Spectrum</meta>
  <meta name="type">Catalog</meta>
  <meta name="custom_meta">
    Custom meta
  </meta>

  <!-- METADATA COMPLETE -->

  <table id="epn_core" onDisk="true" adql="True">
    <publish sets="local.ivo_managed"/>
    <mixin spatial_frame_type="body"
      optional_columns="access_url access_format access_estsize access_md5 time_scale thumbnail_url publisher
        bib_reference file_name target_region feature_name alt_target_name species spatial_coordinate_description"
      >/epntap2#table-2_0</mixin>

    <column name="producer_name" type="text"
      tablehead="producer_name"
      description="producer_name"
      ucd="meta.note;meta.main"
      verbLevel="2"/>

    <column name="external_link" type="text"
      tablehead="external_link"
      description="external_link"
      ucd="meta.ref.url"
      verbLevel="1"/>

    <!--<column name="local_time_min" type="double precision" unit="d"
      tablehead="local_time_min"
      description="local_time_min"
      ucd="time.period;rotation;time.phase;stat.min"
      verbLevel="1"/>-->

    <!--<column name="local_time_max" type="double precision" unit="d"
      tablehead="local_time_max"
      description="local_time_max"
      ucd="time.period;rotation;time.phase;stat.max"
      verbLevel="1"/>-->

    <column name="internal_reference" type="text"
      tablehead="internal_reference"
      description="internal_reference"
      ucd="meta.id.cross"
      verbLevel="2"/>

    <column name="producer_institute" type="text"
      tablehead="producer_institute"
      description="producer_institute"
      ucd="meta.note;meta.main"
      verbLevel="2"/>

    <column name="sample_classification" type="text"
      tablehead="sample_classification"
      description="Provides composition/classification of sample"
      ucd="meta.note;phys.composition"
      verbLevel="1"/>

    <column name="grain_size_min" type="double precision"
      tablehead="grain_size_min" unit="um"
      description="grain_size_min"
      ucd="phys.size;stat.min"
      verbLevel="1"/>

    <column name="grain_size_max" type="double precision"
      tablehead="grain_size_max" unit="um"
      description="grain_size_max"
      ucd="phys.size;stat.max"
      verbLevel="1"/>

    <column name="waveband" type="text"
      tablehead="waveband"
      description="Electro-magnetic band, from enumerated list"
      ucd="instr.bandpass"
      verbLevel="3"/>
  </table>
</resource>
```

Rowmaker custom script

```
<apply>
  <setup>
    <!--par name="toIgnore">
      ["1292F35", "1292F36"]
    </par-->
    <par name="my_meta">
      rd.getMeta("custom_meta").getContent()
    </par>
    <par name="data_id">
      "import"
    </par>
    <par name="source_param_file">
      rd.getById(data_id).sources.iterSources().next().json"
    </par>
  </setup>
  <code>
    from pprint import pprint
    import json
    params = {}
    if os.path.exists(source_param_file):
      with open(source_param_file) as jsonfile:
        params = json.load(jsonfile)

    print(json.dumps(params, indent=4))
    toIgnore = []
    try:
      query_str = """
        SELECT DISTINCT granule_uid, granule_gid
        FROM """+rd.schema+""".epn_core
        """

      last_input_field = params.get('last_input_field', None)
      input_offset = params.get('input_offset', None)

      if last_input_field is not None and input_offset is not None:
        query_str = query_str + """
          WHERE """+last_input_field+"" " >= """+input_offset+""""
          """

      query = (query_str)

      # query = ("""
      #   SELECT DISTINCT granule_uid, granule_gid
      #   FROM """+rd.schema+""".epn_core
      #   /*WHERE granule_uid IN %(g_id)s*/
      #   """)

      # queryArgs = {'g_id': tuple(['1292F35', '1292F36'])}
      queryArgs = {}

      with base.getTableConn() as conn:
        rows = conn.queryToDicts(query, queryArgs)
        # rows = list(conn.queryToDicts(query, queryArgs))
        # rows = conn.query(query, queryArgs)

        for row in rows:
          toIgnore.append(row.get('granule_uid'))

    except Exception as e:
      if "psycogp2.ProgrammingError" in str(type(e)):
        print("=====")
        print("Ingored initial setup error:")
        print(str(e))
        print("=====")
        pass
      else:
        raise e

    # print(toIgnore)

  </code>
  </setup>
  <code>
    if @granule_uid in toIgnore:
      raise IgnoreThisRow("%s already in database" % @granule_uid)
  </code>
</apply>
```

EPN-TAP / SSDM Mapping

A	B	C	D	E	F	G	H	I	J	K	L
EPN-TAP-2	I/O	Description	Value	Type	#	Exp	Unit	KW SSDM	UCD	VO-TABLE param name	Comments
sample_desc	o	free string or hash-list describing the sample, its origin, and possible preparation		Free Text	#	exp	-	"experiment_type" #"sample_name" #"material_origin" #"layer_type" #"layer_texture" #"layer_formation_mode"	meta.note meta.note meta.note meta.note meta.note	[Sample_description] mettre avec 'name': Experiment_type Sample_name Sample_origin Sample_type Sample_texture Sample_formation_mode [Sample_classification]	
sample_classification	o	provides composition as group, class, subclass, etc... of sample concatenated in a hash-list. Should include specification "meteorite" plus the meteorite type when applicable, as well as description of (main) mixtures ingredients. Meteorite types as in Krot et al 2005. Dana or Strunz classification tags can be used for minerals. Minor/trace components are not welcome here.		Text	#	exp	-	"object_meteorite_family/object_micromet_family/object_idp_family" #"object_meteorite_group/object_micromet_class/object_idp_chemical_group" #"object_meteorite_class/object_micromet_type/object_idp_mineralogical_class" #"material_family" - material à filtrer avec "material_relevance" = {main - major, main - minor} #"constituent/phase_family" [phase=liquid/solid/mineral] #"constituent/phase_compound_type" #"constituent/phase_phase_type" #"constituent_name/solid_official_name/liquid_official_name/mineral_ima_name" #"solid_secondary_name/liquid_secondary_name/mineral_secondary_name" #"constituent/phase_chemical_formula" #"solid_classification_class/mineral_strunz_class#"mineral_strunz_code" #"mineral_dana_major_class#"mineral_dana_class#"mineral_dana_code" - à filtrer avec "constituent/basic_constituent_relevance" = {main - major, main - minor} #"molecule_name#"molecule_iupac_name"	phys.composition	Object_family Meteorite_group Micrometeorite_class IDP_chemical_group Meteorite_class Micrometeorite_type IDP_mineralogical_class Material_family Constituent_family Compound_type Phase_type Constituent_name Constituent_secondary_name Chemical_formula Solid_class Strunz_class Strunz_code Dana_major_class Dana_class Dana_code Molecule_name Molecule_iupac_name Molecule_secondary_name	Problème des mélanges à tous les niveaux: comment lister toutes les valeurs d'un même niveau ? => concatener plusieurs valeurs d'un même KW SSDM (ex: plusieurs "mineral_dana_code" si on a un mélange de plusieurs minéraux) ? "material_family" ajouté en v0.8.5
species	o	Identifies a chemical species, case sensitive standard chemical notation in ascii, e. g., H2O for water, CO2 for carbon dioxide or Fe for iron. This format can only accommodate atoms and simple molecular species, and does not support isotopic variations.		Text: case sensitive	#	exp	-	not used (car liste finie, pour atm)	meta.id;phys.atmol	Sample_species	- SSDM: inclu aussi la charge des ions
species_name		Identifies a chemical species or a phase (solid/liquid/mineral) by its name The best way to found a mineral (too ambigue/complex with chemical formula)		Text	#	-	-	"constituent_name/solid_official_name/liquid_official_name/mineral_ima_name" #"solid_secondary_name/liquid_secondary_name/mineral_secondary_name" OU "molecule_name#"molecule_iupac_name" #"molecule_secondary_name"	meta.id;phys.atmol		à ajouter 'species_name' dans EPN-TAP
species_inchikey		use InChikey when for complex molecules The unique way to identify them uniquely provide the particle size range in µm. A very large value (eg. >1000 µm) can be used locally in a service to identify bulk material -		Text	#	-	-	"constituent/phase_species.molecule_inchikey"	meta.id;phys.atmol	Species_inchikey	species_inchikey' a été ajouté dans EPN-TAP
grain_size_min	o	provide the particle size range in µm. A very large value (eg. >1000 µm) can be used locally in a service to identify bulk material -		Double	1	exp	µm	- le mini de "material_grain_size_min" ou "material_grain_size_median"-0.5*_width" - le mini de "matter_xxx_grain_size_min" - le maxi de "material_grain_size_max" ou "material_grain_size_median"+0.5*_width"	phys.size.diameter;stat.min	Sample_grain_size_min	à déterminer à partir de la liste des "grain_sizes"
grain_size_max	o	max of particle size range		Double	1	exp	µm	- le maxi de "matter_xxx_grain_size_max"	phys.size.diameter;stat.max	Sample_grain_size_max	à déterminer à partir de la liste des "grain_sizes"
temperature	o	experimental conditions		Double	1	exp	K	"spectrum_parameters_environment"/"spectrum_sample.temperature_value", sinon "spectrum_sample.temperature_value"	phys.temperature	Sample_temperature	
pressure	o	experimental conditions		Double	1	exp	bar	"spectrum_parameters_environment"/"spectrum_sample.pressure_value", sinon "spectrum_sample.pressure_value"	phys.pressure	Sample_pressure	
measurement_atmosphere	o	description of experimental conditions, free string. Measurements under vacuum are indicated here with the word "vacuum".		Free Text	#	exp	-	"sample_fluid_type#"sample_fluid_temperature#"sample_fluid_pressure#"sample_fluid_composition_specie.chemical_formula#"sample_fluid_comments"	meta.note phys.temperature phys.pressure phys.composition	[Sample_environment] Fluid_type Fluid_temperature Fluid_pressure Fluid_chemical_formula	"sample_fluid_comments" enlevé

Custom columns UCD

```
ucd_sshade_unit = {
  'em.wl': (
    UnitSSHADE.ANGSTROM,          UnitSSHADE.ANGSTROM.value,
    UnitSSHADE.NANOMETER,        UnitSSHADE.NANOMETER.value,
    UnitSSHADE.MICRON,           UnitSSHADE.MICRON.value,
    UnitSSHADE.NANOMETER,        UnitSSHADE.NANOMETER.value,
  ),
  'em.wavenumber': (
    UnitSSHADE.INVERSE_CENTIMETER, UnitSSHADE.INVERSE_CENTIMETER.value,
    UnitSSHADE.INVERSE_METER,      UnitSSHADE.INVERSE_METER.value,
  ),
  'em.freq': (
    UnitSSHADE.KILOHERTZ,         UnitSSHADE.KILOHERTZ.value,
    UnitSSHADE.MEGAHERTZ,        UnitSSHADE.MEGAHERTZ.value,
    UnitSSHADE.GIGAHERTZ,        UnitSSHADE.GIGAHERTZ.value,
    UnitSSHADE.TERAHERTZ,        UnitSSHADE.TERAHERTZ.value,
  ),
  'em.energy': (
    UnitSSHADE.ELECTRONVOLT,      UnitSSHADE.ELECTRONVOLT.value,
    UnitSSHADE.KILOELECTRONVOLT,  UnitSSHADE.KILOELECTRONVOLT.value,
    UnitSSHADE.MEGAELECTRONVOLT,  UnitSSHADE.MEGAELECTRONVOLT.value,
  ),
}

ucd_spectrum_type = {
  'phys.transmission': (EnumSpectrumType.transmission, EnumSpectrumType.ATR_transmission),
  'phys.absorbance': (EnumSpectrumType.absorbance, EnumSpectrumType.ATR_absorbance),
  'phys.absorbance;arith.factor': (EnumSpectrumType.normalized_absorbance, EnumSpectrumType.corrected_ATR_absorbance),
  'phys.absorption.opticalDepth': (EnumSpectrumType.optical_depth, ),
  'phys.absorption.coeff': (EnumSpectrumType.absorption_coefficient, ),
  'phys.refractIndex': (EnumSpectrumType.optical_constants, ),
  'phys.dielectric': (EnumSpectrumType.relative_complex_permittivity, ),
  'phys.reflectance.bidirectional': (EnumSpectrumType.bidirectional_reflectance, ),
  'phys.reflectance.bidirectional.df': (EnumSpectrumType.bidirectional_reflectance_distribution_function, ),
  'phys.reflectance': (EnumSpectrumType.radiance_factor, ),
  'phys.reflectance.factor': (EnumSpectrumType.reflectance_factor, ),
  'phys.reflectance;arith.ratio': (EnumSpectrumType.normalized_reflectance, ),
  'phys.albedo': (EnumSpectrumType.albedo, ),
  'phys.polarization': (EnumSpectrumType.polarization_parameters, ),
  'phot.radiance': (EnumSpectrumType.thermal_radiance, ),
  'phys.emissivity': (EnumSpectrumType.thermal_emissivity, ),
  'phot.flux': (EnumSpectrumType.raw, EnumSpectrumType.fluorescence_emission, EnumSpectrumType.Raman_scattering_intensity),
  'phot.flux;arith.factor': (EnumSpectrumType.normalized_Raman_scattering_intensity, )
}
```

Custom columns VESPA Access

```
# custom
'producer_name',
'producer_institute',
'sample_desc',
'sample_classification',
'sample_id',
'spectrum_type',
'azimuth_min',
'azimuth_max',
'data_calibration_desc',
'grain_size_min',
'grain_size_max',
'geometry_type',
'measurement_atmosphere',
'temperature',
'pressure',
'species_inchikey',
'setup_desc',
'filter',
```

Form Query

EPN-TAP Services Custom Service

=

Processing level

Time

Location

Spectral

Illumination

Data Reference

Optional

Other

sample_classification

LIKE meteorite

x

+

Show 10 entries

Column visibility Show all Hide all

Select All in current page Reset Selection

granule_uid	dataprodct_type	target_name	time_min (d)	time_max (d)	access_url	sample_classification
SPECTRUM_RB_20130101_901	spectrum	Allende	2013-12-31T00:00:00.000	2013-12-31T00:00:00.000	https://www.sshade.e...	meteorite#carbonaceous chon
SPECTRUM_RB_20130101_801	spectrum	Allende	2013-12-31T00:00:00.000	2013-12-31T00:00:00.000	https://www.sshade.e...	meteorite#carbonaceous chon
SPECTRUM_RB_20130101_701	spectrum	Allende	2013-12-31T00:00:00.000	2013-12-31T00:00:00.000	https://www.sshade.e...	meteorite#carbonaceous chon
SPECTRUM_RB_20130101_602	spectrum	Murchison	2013-12-31T00:00:00.000	2013-12-31T00:00:00.000	https://www.sshade.e...	meteorite#carbonaceous chon
SPECTRUM_RB_20130101_601	spectrum	Allende	2013-12-31T00:00:00.000	2013-12-31T00:00:00.000	https://www.sshade.e...	meteorite#carbonaceous chon
SPECTRUM_RB_20130101_502	spectrum	Murchison	2013-12-31T00:00:00.000	2013-12-31T00:00:00.000	https://www.sshade.e...	meteorite#carbonaceous chon
SPECTRUM_RB_20130101_501	spectrum	Allende	2013-12-31T00:00:00.000	2013-12-31T00:00:00.000	https://www.sshade.e...	meteorite#carbonaceous chon
SPECTRUM_RB_20130101_402	spectrum	Murchison	2013-12-31T00:00:00.000	2013-12-31T00:00:00.000	https://www.sshade.e...	meteorite#carbonaceous chon
SPECTRUM_RB_20130101_401	spectrum	Allende	2013-12-31T00:00:00.000	2013-12-31T00:00:00.000	https://www.sshade.e...	meteorite#carbonaceous chon
SPECTRUM_RB_20130101_302	spectrum	Murchison	2013-12-31T00:00:00.000	2013-12-31T00:00:00.000	https://www.sshade.e...	meteorite#carbonaceous chon

Showing 1 to 10 of 216 entries

Page 1 of 22

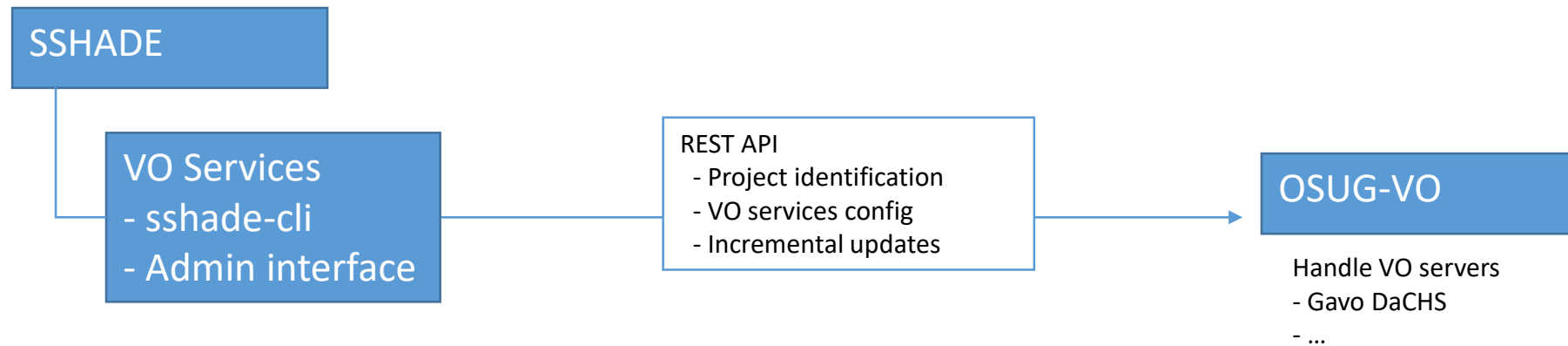
First Previous Next Last

Data Selection Metadata Selection All Data All Metadata

Earth Footprints

OSUG-VO

- Mutualized instance of VO servers for OSUG projects
- REST API to handle data submit & update



OpenAPI REST implementation / Swagger

The screenshot shows the Swagger UI interface. At the top, there's a browser window with the URL `osug-vo.osug.fr/vo-api/static/swagger/index.html?url=/vo-api/swagger.json#/service/post_service_inputs1`. The Swagger logo is in the top left, and the URL `/vo-api/swagger.json` is in the top right. Below the header, the text "API" is displayed with a version number "1.0.0" and a base URL `[Base URL: /vo-api]`. A link to `/vo-api/swagger.json` is also present. The main content area is titled "service Service management" and contains a list of endpoints:

- DELETE** `/service/` DELETE service
- PUT** `/service/` PUT service
- POST** `/service/` POST service
- GET** `/service/` GET service
- DELETE** `/service/{name}` DELETE service
- POST** `/service/{name}` POST service
- GET** `/service/{name}` GET service
- PUT** `/service/{name}` PUT service
- DELETE** `/service/{name}/input/` DELETE service input
- POST** `/service/{name}/input/` POST service input

The selected endpoint `POST /service/{name}/input/` is expanded, showing its parameters:

Name	Description
name * required string (query)	Service name
user string (query)	Input user
filename string (query)	Input directory/filename (* wildcard to copy uploaded filename)
revision integer (query)	Input revision number
publish string (query)	Publish service
partial_import string (query)	Import only this name
last_input_field string (query)	Field name used to return the last input row imported
input_offset string (query)	The input offset field value. don't check previous values
parameters string (query)	Custom parameters JSON formatted string representation

The detailed view of the `POST /service/{name}/input/` endpoint is shown. It includes a "Try it out" button in the top right corner. The parameters section is identical to the one in the previous screenshot. The responses section shows the following:

Response content type: `application/json`

Code	Description	
200	Success	
Headers:		
name	Description	Type
auth-id	Authentication ID	string
auth-key	Authentication Key	string
400	Bad request	
Headers:		
name	Description	Type
auth-id	Authentication ID	string
auth-key	Authentication Key	string
403	Authentication error / ACL error	
Headers:		
name	Description	Type
auth-id	Authentication ID	string
auth-key	Authentication Key	string

SSHADE Operations

```
# local store
sshade-cli vo init-store

# service
sshade-cli vo init-service q.rd # must have admin_auth_id in ini
sshade-cli vo reset-service q.rd --delete-confirm= # must have admin_auth_id in ini
sshade-cli vo update-service q.rd

# data & input
sshade-cli vo extract spectrum --output data/spectrum.csv --timer
sshade-cli vo extract spectrum --output data/spectrum.csv --timer --query "date_created > 2018-12-01"
sshade-cli vo extract spectrum --output data/spectrum.csv --timer --query "uid = SPECTRUM_UID"
sshade-cli vo post-input data/spectrum.csv
sshade-cli vo post-input data/spectrum.csv --publish # called at least once to publish the service
sshade-cli vo get-inputs
```

3

1

2

Create service

```
{
  "message": "Inserted service",
  "method": "POST",
  "service": {
    "user_id": 4,
    "name": "sshade spectra",
    "label": "SSHADE spectra library",
    "filename": "q.rd",
    "creation_date": "2020-03-09 16:58:57.568523",
    "type": "gavo",
    "id": 238,
    "revision": 1
  }
}
```

Extract spectrum CSV

433/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_JG_20090301_023	bidirectional	reflectance
434/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_JG_20090301_066	bidirectional	reflectance
435/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_JG_20090301_064	bidirectional	reflectance
436/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_JG_20090301_057	bidirectional	reflectance
437/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_JG_20090301_049	bidirectional	reflectance
438/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_JG_20090301_046	bidirectional	reflectance
439/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_JG_20090301_039	bidirectional	reflectance
440/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_JG_20090301_038	bidirectional	reflectance
441/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_JG_20090301_037	bidirectional	reflectance
442/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_JG_20090301_029	bidirectional	reflectance
443/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_JG_20090301_040	bidirectional	reflectance
444/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_JG_20090301_071	bidirectional	reflectance
445/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_JG_20090301_061	bidirectional	reflectance
446/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(22s remaining, 30s total)	SPECTRUM_JG_20090301_055	bidirectional	reflectance
447/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(21s remaining, 30s total)	SPECTRUM_JG_20090301_054	bidirectional	reflectance
448/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(21s remaining, 30s total)	SPECTRUM_JG_20090301_034	bidirectional	reflectance
449/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(21s remaining, 30s total)	SPECTRUM_JG_20090301_053	bidirectional	reflectance
450/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(20s remaining, 29s total)	SPECTRUM_JG_20090301_027	bidirectional	reflectance
451/2343	extract	done	in	8s	[0.00s]	[avg 0.01s]	(20s remaining, 29s total)	SPECTRUM_JG_20090301_051	bidirectional	reflectance
452/2343	extract	done	in	9s	[0.00s]	[avg 0.01s]	(20s remaining, 29s total)	SPECTRUM_JG_20090301_045	bidirectional	reflectance
453/2343	extract	done	in	9s	[0.00s]	[avg 0.01s]	(20s remaining, 29s total)	SPECTRUM_JG_20090301_042	bidirectional	reflectance
454/2343	extract	done	in	9s	[0.02s]	[avg 0.01s]	(21s remaining, 30s total)	SPECTRUM_TG_20181312_003	optical constants	
455/2343	extract	done	in	9s	[0.00s]	[avg 0.01s]	(20s remaining, 30s total)	SPECTRUM_TG_20181312_002	optical constants	
456/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(20s remaining, 30s total)	SPECTRUM_TG_20181312_001	optical constants	
457/2343	extract	done	in	9s	[0.03s]	[avg 0.01s]	(20s remaining, 30s total)	SPECTRUM_AK_20141109_5.2	corrected ATR absorbance	
458/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(20s remaining, 30s total)	SPECTRUM_AK_20141109_4.2	corrected ATR absorbance	
459/2343	extract	done	in	9s	[0.02s]	[avg 0.01s]	(20s remaining, 30s total)	SPECTRUM_AK_20141109_3.2	corrected ATR absorbance	
460/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(20s remaining, 30s total)	SPECTRUM_AK_20141109_2.2	corrected ATR absorbance	
461/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(20s remaining, 29s total)	SPECTRUM_AK_20141109_1.2	corrected ATR absorbance	
462/2343	extract	done	in	9s	[0.03s]	[avg 0.01s]	(21s remaining, 30s total)	SPECTRUM_GL_20150102_3	absorbance	
463/2343	extract	done	in	9s	[0.00s]	[avg 0.01s]	(21s remaining, 30s total)	SPECTRUM_GL_20150102_2	absorbance	
464/2343	extract	done	in	9s	[0.00s]	[avg 0.01s]	(21s remaining, 30s total)	SPECTRUM_GL_20150102_1	absorbance	
465/2343	extract	done	in	9s	[0.00s]	[avg 0.01s]	(21s remaining, 30s total)	SPECTRUM_GL_20150102_4	absorbance	
466/2343	extract	done	in	9s	[0.06s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_VC_20050727_150	bidirectional	reflectance
467/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_VC_20050727_145	bidirectional	reflectance
468/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_VC_20050727_140	bidirectional	reflectance
469/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_VC_20050727_135	bidirectional	reflectance
470/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(22s remaining, 31s total)	SPECTRUM_VC_20050727_130	bidirectional	reflectance
471/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(22s remaining, 32s total)	SPECTRUM_VC_20050727_125	bidirectional	reflectance
472/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(22s remaining, 32s total)	SPECTRUM_VC_20050727_120	bidirectional	reflectance
473/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(22s remaining, 32s total)	SPECTRUM_VC_20050727_115	bidirectional	reflectance
474/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(22s remaining, 32s total)	SPECTRUM_VC_20050727_110	bidirectional	reflectance
475/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(22s remaining, 32s total)	SPECTRUM_VC_20050727_105	bidirectional	reflectance
476/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(22s remaining, 32s total)	SPECTRUM_VC_20050727_100	bidirectional	reflectance
477/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 32s total)	SPECTRUM_VC_20050727_090	bidirectional	reflectance
478/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 32s total)	SPECTRUM_VC_20050727_085	bidirectional	reflectance
479/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 32s total)	SPECTRUM_VC_20050727_080	bidirectional	reflectance
480/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 32s total)	SPECTRUM_VC_20050727_075	bidirectional	reflectance
481/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 32s total)	SPECTRUM_VC_20050727_070	bidirectional	reflectance
482/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 32s total)	SPECTRUM_VC_20050727_065	bidirectional	reflectance
483/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 32s total)	SPECTRUM_VC_20050727_060	bidirectional	reflectance
484/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 33s total)	SPECTRUM_VC_20050727_055	bidirectional	reflectance
485/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 33s total)	SPECTRUM_VC_20050727_050	bidirectional	reflectance
486/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 33s total)	SPECTRUM_VC_20050727_045	bidirectional	reflectance
487/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 33s total)	SPECTRUM_VC_20050727_040	bidirectional	reflectance
488/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 33s total)	SPECTRUM_VC_20050727_035	bidirectional	reflectance
489/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 33s total)	SPECTRUM_VC_20050727_030	bidirectional	reflectance
490/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 33s total)	SPECTRUM_VC_20050727_020	bidirectional	reflectance
491/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 33s total)	SPECTRUM_VC_20050727_015	bidirectional	reflectance
492/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 33s total)	SPECTRUM_VC_20050727_010	bidirectional	reflectance
493/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 33s total)	SPECTRUM_VC_20050727_005	bidirectional	reflectance
494/2343	extract	done	in	9s	[0.01s]	[avg 0.01s]	(23s remaining, 33s total)	SPECTRUM_VC_20050727_000	bidirectional	reflectance
495/2343	extract	done	in	9s	[0.04s]	[avg 0.01s]	(24s remaining, 34s total)	SPECTRUM_JG_20090208_046	bidirectional	reflectance
496/2343	extract	done	in	9s	[0.00s]	[avg 0.01s]	(24s remaining, 34s total)	SPECTRUM_JG_20090208_045	bidirectional	reflectance
497/2343	extract	done	in	9s	[0.00s]	[avg 0.01s]	(24s remaining, 34s total)	SPECTRUM_JG_20090208_044	bidirectional	reflectance
498/2343	extract	done	in	9s	[0.00s]	[avg 0.01s]	(24s remaining, 34s total)	SPECTRUM_JG_20090208_043	bidirectional	reflectance

Push data

```
{
  "last_input_value": "2020-03-07 08:22:16",
  "affected_rows": 2343,
  "input": {
    "user_id": 4,
    "content_type": "text_csv",
    "parameters": "{\\\"last_input_field_local\\\": \\\"date_last_updated\\\", \\\"data_type\\\": \\\"spectrum\\\", \\\"last_input_field\\\": \\\"modification_date\\\"}",
    "filename": "data/spectrum.csv",
    "original_filename": "spectrum.csv",
    "date": "2020-03-09 16:59:11.187582",
    "service_id": 238,
    "id": 298,
    "revision": 1
  },
  "message": "Inserted input",
  "method": "POST"
}
```

GAVO DaCHS instance

OSUG

Table information for 'sshade_spectra.epn_core'

General

This table is available for [ADQL queries](#) and through the [TAP](#) endpoint.

Resource Description: SSHADE spectra library.

For a list of **all services and tables** belonging to this table's resource, see [Information on resource 'SSHADA spectra library'](#).

Citing this table

To cite the **table as such**, we suggest the following BibTeX entry:

```
@MISC{vo:sshade_spectra_epn_core,
  year=2017,
  title={SSHADA spectra library},
  author={Schmitt, B. and et al},
  url={http://osug-vo.osug.fr:8080/tableinfo/sshade_spectra.epn_core},
  howpublished={VO resource provided by the {OSUG} Virtual Observatory}
}
```

Fields

Sorted by DB column index. [Sort alphabetically](#)

Name	Table Head	Description	Unit	UCD
granule_uid	Granule_uid	Internal table row index Unique ID in data service, also in v2. Can be alphanumeric.	N/A	meta.id
granule_gid	Granule_gid	Common to granules of same type (e.g. same map projection, or geometry data products). Can be alphanumeric.	N/A	meta.id
obs_id	Obs_id	Associates granules derived from the same data (e.g. various representations/processing levels). Can be alphanumeric, may be the ID of original observation.	N/A	meta.id
dataprodukt_type	Dataprodukt_type	The high-level organization of the data product, from enumerated list (e.g., 'im' for image, 'sp' for spectrum) [Note et prod]	N/A	meta.code.class
target_name	Target_name	Standard IAU name of target (from a list related to target class), case sensitive	N/A	meta.id.src
target_class	Target_class	Type of target, from enumerated list	N/A	meta.code.class.src
time_min	Time_min	Acquisition start time (in JD)	d	time.start
time_max	Time_max	Acquisition stop time (in JD)	d	time.end
time_sampling_step_min	Time_sampling_step_min	Sampling time for measurements of dynamical phenomena, lower limit.	s	time.interval.stat.min
time_sampling_step_max	Time_sampling_step_max	Sampling time for measurements of dynamical phenomena, upper limit	s	time.interval.stat.max
time_exp_min	Time_exp_min	Integration time of the measurement, lower limit.	s	time.duration;obs.exposure;stat.min
time_exp_max	Time_exp_max	Integration time of the measurement, upper limit	s	time.duration;obs.exposure;stat.max
spectral_range_min	Spectral_range_min	Spectral range (frequency), lower limit.	Hz	em.freq;stat.min
spectral_range_max	Spectral_range_max	Spectral range (frequency), upper limit	Hz	em.freq;stat.max
spectral_sampling_step_min	Spectral_sampling_step_min	spectral sampling step, lower limit.	Hz	em.freq.step;stat.min
spectral_sampling_step_max	Spectral_sampling_step_max	spectral sampling step, upper limit	Hz	em.freq.step;stat.max
spectral_resolution_min	Spectral_resolution_min	Spectral resolution, lower limit.	Hz	spect.resolution;stat.min
spectral_resolution_max	Spectral_resolution_max	Spectral resolution, upper limit	Hz	spect.resolution;stat.max
c1min	C1min	Longitude on body, lower limit.	deg	pos.bodyrc.long;stat.min

Resource Record for ivo://osug-vo.osug/sshade_spectra/q/epn_core

- Status: active
- Type: vs:CatalogResource
- Created: 2017-07-12T00:00:00
- Updated: 2020-03-05T19:07:40

title	SSHADA spectra library
identifier	ivo://osug-vo.osug/sshade_spectra/q/epn_core
curation	
publisher	OSUG Virtual Observatory
creator	
name	Schmitt, B.
creator	
name	et al
date	
role	updated
	2020-03-05T19:07:40
contact	
name	Damien Albert
address	122 rue de la piscine 38400 Saint Martin d'Hères France
email	damien.albert@univ-grenoble-alpes.fr
content	
subject	spectroscopy
subject	Catalogs
subject	Spectrum
description	SSHADA spectra library.
referenceURL	http://osug-vo.osug.fr:8080/tableinfo/sshade_spectra.epn_core
type	Catalog

Example : TOPCAT Access

The screenshot displays the TOPCAT software interface with several windows open:

- Table List:** Shows a list of tables including 'TAP_3_sshade_spectra.apn', 'SPECTRUM_OP_20140730_5', and 'SPECTRUM_LB_20140120_0'.
- Current Table Properties:** Displays details for 'SPECTRUM_LB_20140120_015.data.vot', including its location, name, and 7 columns.
- Plane Plot (2):** A Raman spectrum plot showing 'raman_scattering_intensity / AU' on the y-axis (0 to 600) and 'wavenumber / cm-1' on the x-axis (1000 to 3500). The plot features a prominent peak at approximately 1500 cm⁻¹.
- ADQL Text:** Shows the query: `SELECT TOP 1000 * FROM sshade_spe...`
- Position Subsets Form:** A dialog box for configuring the plot, with 'X: wavenumber' and 'Y: raman_scattering_intensity' selected.
- Data Table:** A large table at the bottom of the interface with columns for table ID, name, location, application, and UTC. The table contains 1000 rows of data.

Example : Cassis Access

The image displays the Cassis Online interface, which is a web-based tool for accessing and analyzing astronomical spectra. The main window, titled "Cassis Online - database from SQLITE (miniCassis20140108.db)", features a menu bar (File, Edit, Modules, View, Scripts, Windows, Database, Preferences, VO, Help) and a toolbar with various icons for file operations and data visualization.

The central plot, titled "Full Spectrum", shows the bidirectional reflectance (y-axis, ranging from -1 to 16) versus frequency (top x-axis, ranging from 50,000 to 300,000 GHz) and wave number (bottom x-axis, ranging from 2,500 to 10,000 cm⁻¹). The plot displays a complex spectrum with several absorption features, particularly in the 4,000 to 7,000 cm⁻¹ range.

On the left side, there is a "Data" panel with a "Load" button and input fields for "vlsr data" (0.0 km/s) and "in" (SKY). Below this is a "Tuning" panel with "Range min" (2001.7799999) and "max" (9999.2589999) fields, and a "cm-1" dropdown menu.

Below the tuning panel is a "Service URL" field (http://osug-vo.osug.f) and a "Table name" field (e_s). A table of data is displayed, with columns for "granule_uid" and "granule_gi". The table contains several rows of data, including:

granule_uid	granule_gi
SPECTRUM_BS_20130204_001	EXPERIMENT_BS_2013
SPECTRUM_CT_20100226_210_124	EXPERIMENT_CT_2009
SPECTRUM_CT_20090416_690_150	EXPERIMENT_CT_2009
SPECTRUM_BS_20130204_003	EXPERIMENT_BS_2013
SPECTRUM_YD_20160401_002	EXPERIMENT_YD_2016
SPECTRUM_CT_20090415_560_120	EXPERIMENT_CT_2009
SPECTRUM_KD_20170712_X50A_200K	EXPERIMENT_KD_2017
SPECTRUM_YD_20160401_005	EXPERIMENT_YD_2016
SPECTRUM_BS_20130204_004	EXPERIMENT_BS_2013
SPECTRUM_AK_20141103_2.2	EXPERIMENT_AK_2014
SPECTRUM_BS_20130204_006	EXPERIMENT_BS_2013
SPECTRUM_HM_20170913_010	EXPERIMENT_HM_2017
SPECTRUM_HM_20170913_012	EXPERIMENT_HM_2017
SPECTRUM_CT_20090409_690_150	EXPERIMENT_CT_2009
SPECTRUM_LB_20191211_102	EXPERIMENT_LB_2019
SPECTRUM_LB_20191211_103	EXPERIMENT_LB_2019
SPECTRUM_LB_20191211_101	EXPERIMENT_LB_2019

At the bottom of the interface, there is a "VOTable data parsed" section. The "X Tools" panel includes "Shift" (left and right arrows), "Zoom" (+ and - buttons), "Search" (input field with "3400.19" and "Go" button), and "Range" (input field with "3799.35" and "Set" button). The "X_{top}" dropdown is set to "Frequency" [GHz] and the "X_{bot}" dropdown is set to "Wave number" [cm⁻¹]. A "Log" checkbox is also present. The "Y Tools" and "Stack/Mosaic" panels are currently inactive. The "InfoPanel" on the right shows "Plot Info" for "Spectrum Analysis 1", with a checked checkbox and a "Remove All" button at the bottom.