

Kinematic Factor

1.0

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Chapter 1

Modules Index

1.1 Modules List

Here is a list of all modules with brief descriptions:

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Chapter 2

Data Type Index

2.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

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KFacParams	28
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KfacSVS	34
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Chapter 3

Data Type Index

3.1 Data Types List

Here are the data types with brief descriptions:

hadron	25
irrep_label	26
KFacParams	28
KfacSSS	31
KfacSSV	32
KfacSVS	34
KfacSVV	35
KFactor	37
Ph::phChars	38
KfUt::ToArray	39

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File Index

4.1 File List

Here is a list of all files with brief descriptions:

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Chapter 5

Module Documentation

5.1 IrrepName Namespace Reference

Functions

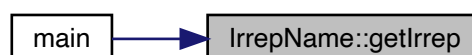
- `std::vector< std::string > getIrrep (int &twoJ, int &P, string &lg)`
- `int irrepRows (string &irrep)`

5.1.1 Function Documentation

5.1.1.1 `getIrrep()`

```
std::vector< std::string > IrrepName::getIrrep (  
    int & twoJ,  
    int & P,  
    string & lg )
```

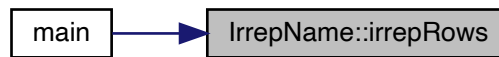
Here is the caller graph for this function:



5.1.1.2 irrepRows()

```
int IrrepName::irrepRows (
    string & irrep )
```

Here is the caller graph for this function:



5.2 iter Namespace Reference

Functions

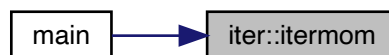
- `std::vector< Vector3d > itermom (double max_mom)`

5.2.1 Function Documentation

5.2.1.1 itermom()

```
std::vector< Vector3d > iter::itermom (
    double max_mom )
```

Here is the caller graph for this function:



5.3 KFactorEnv Namespace Reference

Functions

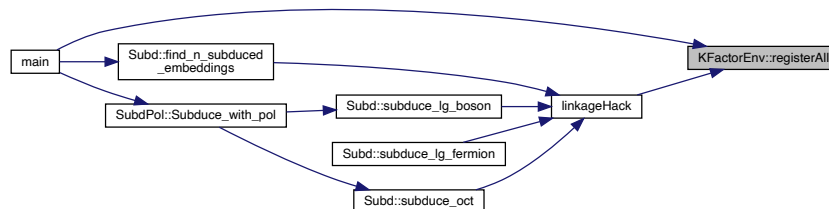
- `bool registerAll ()`

5.3.1 Function Documentation

5.3.1.1 registerAll()

```
bool KFactorEnv::registerAll ( )
```

Here is the caller graph for this function:



5.4 KfUt Namespace Reference

Data Structures

- class [ToArray](#)

Functions

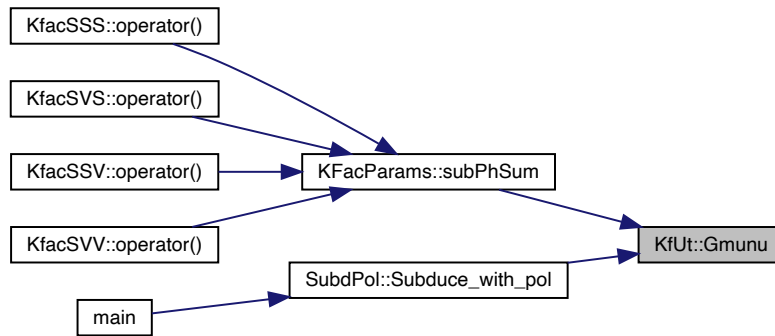
- double [truncate](#) (double num, int precision)
- `Eigen::MatrixXcd` [Gmunu](#) ()

5.4.1 Function Documentation

5.4.1.1 Gmunu()

```
Eigen::MatrixXcd KfUt::Gmunu ( )
```

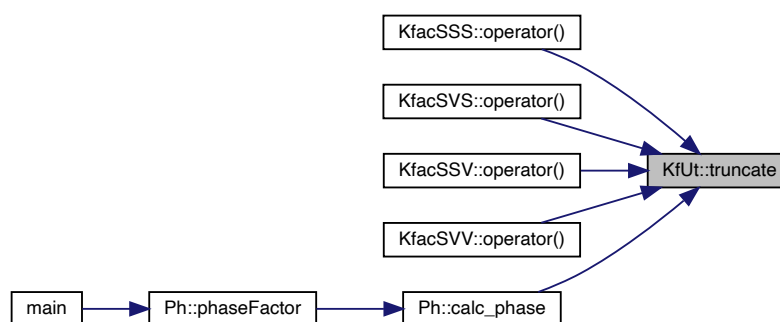
Here is the caller graph for this function:



5.4.1.2 truncate()

```
double KfUt::truncate (
    double num,
    int precision )
```

Here is the caller graph for this function:



5.5 LevCiv Namespace Reference

Functions

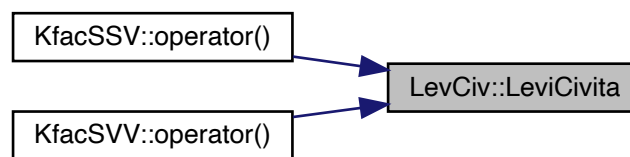
- double [LeviCivita](#) (int arr[], int n)

5.5.1 Function Documentation

5.5.1.1 LeviCivita()

```
double LevCiv::LeviCivita (
    int arr[],
    int n )
```

Here is the caller graph for this function:



5.6 LittleGrp Namespace Reference

Functions

- string [generateLittleGroup](#) (Eigen::Vector3d &mom_)
- std::vector< double > [refAngles](#) (Eigen::Vector3d mom1)

5.6.1 Function Documentation

5.6.1.1 generateLittleGroup()

```
string LittleGrp::generateLittleGroup (
    Eigen::Vector3d & mom_ )
```

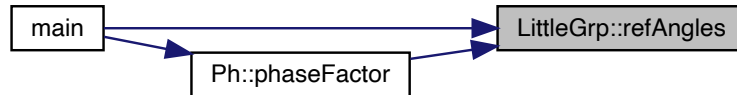
Here is the caller graph for this function:



5.6.1.2 refAngles()

```
std::vector< double > LittleGrp::refAngles (
    Eigen::Vector3d mom1 )
```

Here is the caller graph for this function:



5.7 naming Namespace Reference

Functions

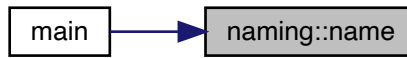
- string [name](#) (int npt, [Ph::tripKey](#) two_abs_lam, Vector3d mom1, Vector3d mom_curr, Vector3d mom3, [irrep_label](#) rep1, [irrep_label](#) rep_curr, [irrep_label](#) rep3, string LG1, string LG_curr, string LG3, string lev1, string lev3)

5.7.1 Function Documentation

5.7.1.1 name()

```
string naming::name (
    int npt,
    Ph::tripKey two_abs_lam,
    Vector3d mom1,
    Vector3d mom_curr,
    Vector3d mom3,
    irrep\_label rep1,
    irrep\_label rep_curr,
    irrep\_label rep3,
    string LG1,
    string LG_curr,
    string LG3,
    string lev1,
    string lev3 )
```

Here is the caller graph for this function:



5.8 Ph Namespace Reference

Data Structures

- struct [phChars](#)

Typedefs

- typedef std::tuple< int, int, int > [tripKey](#)

Functions

- [Ph::phChars phaseFactor](#) (int twoJ1, int twoJ2, int twoJCurr, Eigen::Vector3d mom1, Eigen::Vector3d mom2, bool compute)
- std::complex< double > [comp_Wigner_d](#) (int twoJ, int twolam1, int twolam2, double a1, double b1, double c1, double a2, double b2, double c2, int n)
- map< [Ph::tripKey](#), complex< double > > [calc_phase](#) (int twoJ1, int twoJ2, int twoJCurr, double mom1_sq, double mom2_sq, double mom_curr_sq, vector< double > r_mom1, vector< double > r_n_mom1, vector< double > r_mom2, vector< double > r2, vector< double > r_mom_curr, vector< double > r_n_mom_curr)
- map< [Ph::tripKey](#), complex< double > > [cnst_phase](#) (int twoJ1, int twoJ2, int twoJCurr)

5.8.1 Typedef Documentation

5.8.1.1 tripKey

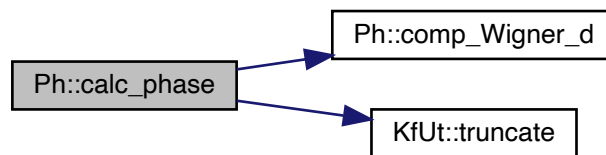
```
typedef std::tuple<int, int, int> Ph::tripKey
```

5.8.2 Function Documentation

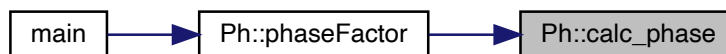
5.8.2.1 calc_phase()

```
map< Ph::tripKey, complex< double > > Ph::calc_phase (
    int twoJ1,
    int twoJ2,
    int twoJCurr,
    double mom1_sq,
    double mom2_sq,
    double mom_curr_sq,
    vector< double > r_mom1,
    vector< double > r_n_mom1,
    vector< double > r_mom2,
    vector< double > r2,
    vector< double > r_mom_curr,
    vector< double > r_n_mom_curr )
```

Here is the call graph for this function:



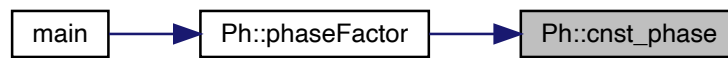
Here is the caller graph for this function:



5.8.2.2 cnst_phase()

```
map< Ph::tripKey, complex< double > > Ph::cnst_phase (
    int twoJ1,
    int twoJ2,
    int twoJCurr )
```

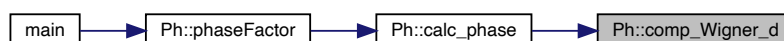

Here is the caller graph for this function:



5.8.2.3 `comp_Wigner_d()`

```
std::complex< double > Ph::comp_Wigner_d (
    int twoJ,
    int twolam1,
    int twolam2,
    double a1,
    double b1,
    double c1,
    double a2,
    double b2,
    double c2,
    int n )
```

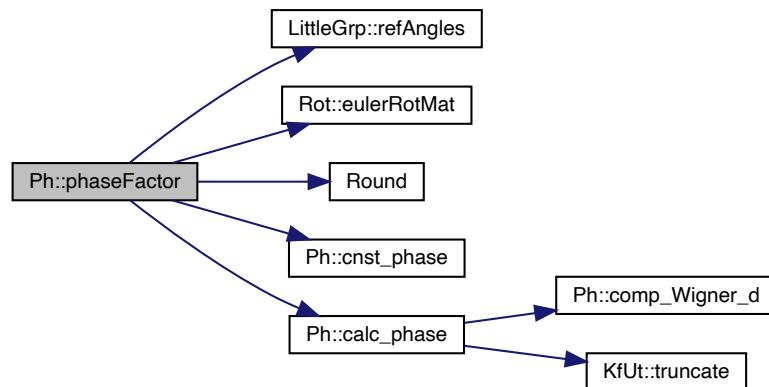
Here is the caller graph for this function:



5.8.2.4 `phaseFactor()`

```
Ph::phChars Ph::phaseFactor (
    int twoJ1,
    int twoJ2,
    int twoJCurr,
    Eigen::Vector3d mom1,
    Eigen::Vector3d mom2,
    bool compute )
```

Here is the call graph for this function:



Here is the caller graph for this function:



5.9 PolVec Namespace Reference

Functions

- `Eigen::MatrixXcd` [getPolz4](#) (double &mom_sq, const int &two_helicity, double &mass_sq, bool &curr)
- `Eigen::MatrixXcd` [getPol4](#) (double &mom_sq, const int &two_helicity, double &mass_sq, double &phi, double &theta, double &psi, bool curr)

5.9.1 Function Documentation

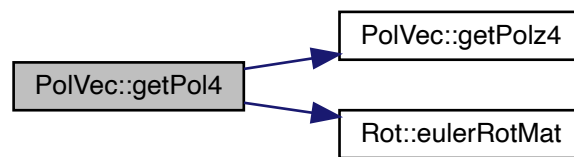
5.9.1.1 getPol4()

```

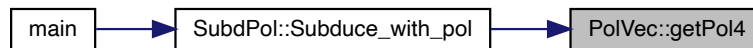
Eigen::MatrixXcd PolVec::getPol4 (
    double & mom_sq,
    const int & two_helicity,
    double & mass_sq,
    double & phi,
    double & theta,
    double & psi,
    bool curr )

```

Here is the call graph for this function:



Here is the caller graph for this function:



5.9.1.2 getPolz4()

```

Eigen::MatrixXcd PolVec::getPolz4 (
    double & mom_sq,
    const int & two_helicity,
    double & mass_sq,
    bool & curr )

```

Here is the caller graph for this function:



5.10 Rot Namespace Reference

Functions

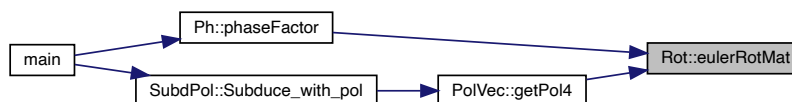
- Eigen::MatrixXd [eulerRotMat](#) (double alpha, double beta, double gamma)

5.10.1 Function Documentation

5.10.1.1 [eulerRotMat\(\)](#)

```
Eigen::MatrixXd Rot::eulerRotMat (
    double alpha,
    double beta,
    double gamma )
```

Here is the caller graph for this function:



5.11 Subd Namespace Reference

Functions

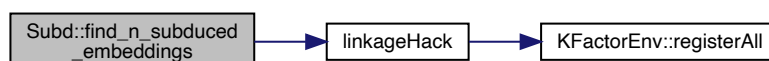
- map< int, complex< double > > [subduce_lg_boson](#) (const [irrep_label](#) &irrep, const string &little_group)
- map< int, complex< double > > [subduce_lg_fermion](#) (const [irrep_label](#) &irrep, const string &little_group)
- map< int, complex< double > > [subduce_oct](#) (const [irrep_label](#) &irrep)
- int [find_n_subduced_embeddings](#) (const string &group, const string &irrep, int twoJ, int eta_tilde)

5.11.1 Function Documentation

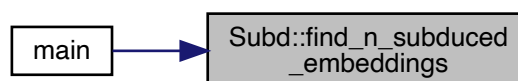
5.11.1.1 find_n_subduced_embeddings()

```
int Subd::find_n_subduced_embeddings (
    const string & group,
    const string & irrep,
    int twoJ,
    int eta_tilde )
```

Here is the call graph for this function:



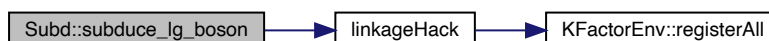
Here is the caller graph for this function:



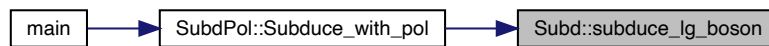
5.11.1.2 subduce_lg_boson()

```
map< int, complex< double > > Subd::subduce_lg_boson (
    const irrep_label & irrep,
    const string & little_group )
```

Here is the call graph for this function:



Here is the caller graph for this function:

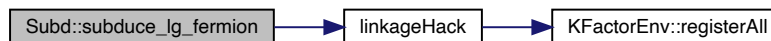


5.11.1.3 subduce_lg_fermion()

```

map< int, complex< double > > Subd::subduce_lg_fermion (
    const irrep_label & irrep,
    const string & little_group )
  
```

Here is the call graph for this function:

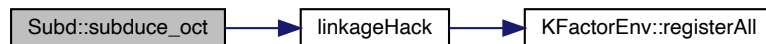


5.11.1.4 subduce_oct()

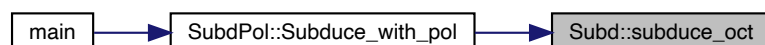
```

map< int, complex< double > > Subd::subduce_oct (
    const irrep_label & irrep )
  
```

Here is the call graph for this function:



Here is the caller graph for this function:



5.12 SubdPol Namespace Reference

Functions

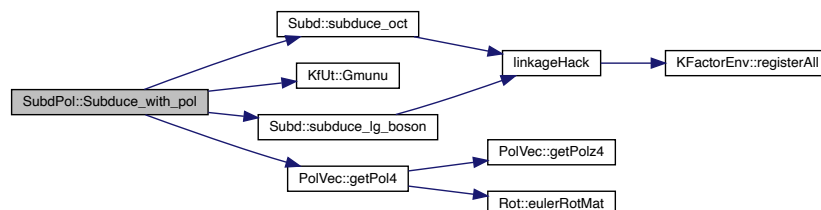
- `map< int, Eigen::MatrixXcd > Subduce_with_pol` (double &mom_sq, double &mass_sq, int &twoJ, const `irrep_label` &irrep, const string &little_group, double R1_phi, double R1_theta, double R1_psi, bool curr)

5.12.1 Function Documentation

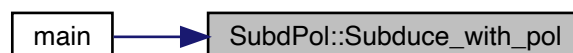
5.12.1.1 Subduce_with_pol()

```
map< int, Eigen::MatrixXcd > SubdPol::Subduce_with_pol (
    double & mom_sq,
    double & mass_sq,
    int & twoJ,
    const irrep_label & irrep,
    const string & little_group,
    double R1_phi,
    double R1_theta,
    double R1_psi,
    bool curr )
```

Here is the call graph for this function:



Here is the caller graph for this function:



Chapter 6

Data Type Documentation

6.1 hadron Struct Reference

```
#include <gen_redstar_xml.h>
```

Data Fields

- string [name](#)
- Array1dO< string > [levels](#)
- int [twoJ](#)
- int [P](#)
- int [ell](#)
- double [max_mom](#)
- ADAT::Array1dO< string > [elab](#)

6.1.1 Field Documentation

6.1.1.1 elab

```
ADAT::Array1dO<string> hadron::elab
```

6.1.1.2 ell

```
int hadron::ell
```

6.1.1.3 levels

```
Array1dO<string> hadron::levels
```

6.1.1.4 max_mom

```
double hadron::max_mom
```

6.1.1.5 name

```
string hadron::name
```

6.1.1.6 P

```
int hadron::P
```

6.1.1.7 twoJ

```
int hadron::twoJ
```

The documentation for this struct was generated from the following file:

- [/Users/archanar/git/Kinematic_factors/compute_Kfactors/src/io/gen_redstar_xml.h](#)

6.2 irrep_label Struct Reference

```
#include <subduction.h>
```

Public Member Functions

- bool [operator<](#) (const [irrep_label](#) &rhs) const

Data Fields

- string [irrep](#)
- int [row](#)
- int [twoJ](#)
- int [n](#)
- int [P](#)

6.2.1 Member Function Documentation

6.2.1.1 operator<()

```
bool irrep_label::operator< (
    const irrep\_label & rhs ) const
```

6.2.2 Field Documentation

6.2.2.1 irrep

```
string irrep_label::irrep
```

6.2.2.2 n

```
int irrep_label::n
```

6.2.2.3 P

```
int irrep_label::P
```

6.2.2.4 row

```
int irrep_label::row
```

6.2.2.5 twoJ

```
int irrep_label::twoJ
```

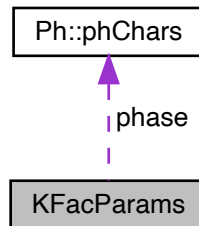
The documentation for this struct was generated from the following file:

- /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/[subduction.h](#)

6.3 KFacParams Class Reference

```
#include <kfac_params.h>
```

Collaboration diagram for KFacParams:



Public Member Functions

- virtual [~KFacParams](#) ()
- [KFacParams](#) (map< int, Eigen::MatrixXcd >, map< int, Eigen::MatrixXcd >, map< int, Eigen::MatrixXcd >, [Ph::phChars](#), VectorXd, VectorXd)
- virtual MatrixXcd [subPhSum](#) () const
- virtual [Ph::tripKey two_abs_lam](#) () const

Data Fields

- map< int, Eigen::MatrixXcd > [Sub1](#)
- map< int, Eigen::MatrixXcd > [SubCurr](#)
- map< int, Eigen::MatrixXcd > [Sub3](#)
- [Ph::phChars](#) [phase](#)
- VectorXd [qp](#)
- VectorXd [qm](#)

6.3.1 Constructor & Destructor Documentation

6.3.1.1 ~KFacParams()

```
virtual KFacParams::~~KFacParams ( ) [inline], [virtual]
```

6.3.1.2 KFacParams()

```

KFacParams::KFacParams (
    map< int, Eigen::MatrixXcd > Sub1_,
    map< int, Eigen::MatrixXcd > SubCurr_,
    map< int, Eigen::MatrixXcd > Sub3_,
    Ph::phChars phase_,
    VectorXd qp_,
    VectorXd qm_ )

```

6.3.2 Member Function Documentation

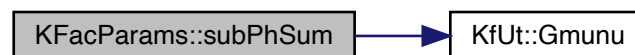
6.3.2.1 subPhSum()

```

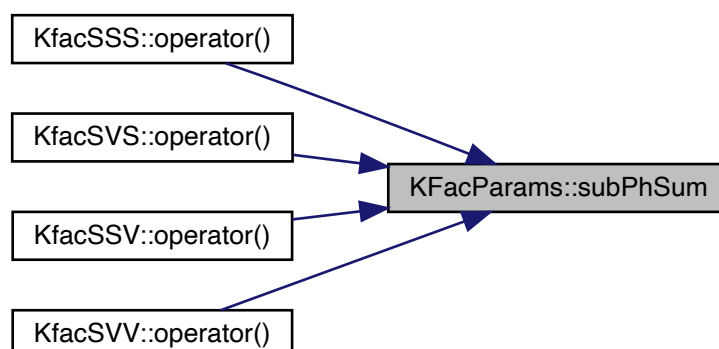
MatrixXcd KFacParams::subPhSum ( ) const [virtual]

```

Here is the call graph for this function:



Here is the caller graph for this function:



6.3.2.2 two_abs_lam()

```
Ph::tripKey KFacParams::two_abs_lam ( ) const [virtual]
```

6.3.3 Field Documentation

6.3.3.1 phase

```
Ph::phChars KFacParams::phase
```

6.3.3.2 qm

```
VectorXd KFacParams::qm
```

6.3.3.3 qp

```
VectorXd KFacParams::qp
```

6.3.3.4 Sub1

```
map< int, Eigen::MatrixXcd > KFacParams::Sub1
```

6.3.3.5 Sub3

```
map< int, Eigen::MatrixXcd > KFacParams::Sub3
```

6.3.3.6 SubCurr

```
map< int, Eigen::MatrixXcd > KFacParams::SubCurr
```

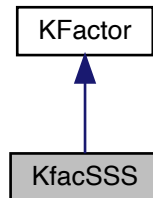
The documentation for this class was generated from the following files:

- /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/[kfac_params.h](#)
- /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/[kfac_params.cc](#)

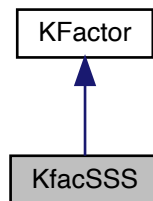
6.4 KfacSSS Class Reference

```
#include <kfactor_pigammapi.h>
```

Inheritance diagram for KfacSSS:



Collaboration diagram for KfacSSS:



Public Member Functions

- `vector< complex< double > > operator() (const KFacParams ¶ms) const`
- `string name () const`

6.4.1 Member Function Documentation

6.4.1.1 `name()`

```
string KfacSSS::name ( ) const [inline], [virtual]
```

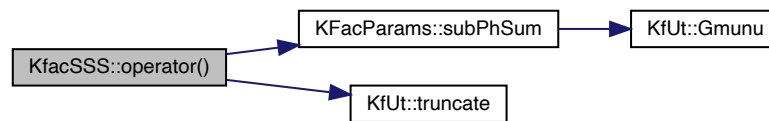
Implements [KFactor](#).

6.4.1.2 operator()

```
vector< complex< double > > KfacSSS::operator() (
    const KFacParams & params ) const [virtual]
```

Implements [KFactor](#).

Here is the call graph for this function:



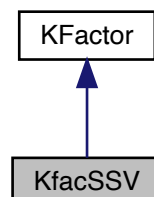
The documentation for this class was generated from the following files:

- [/Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactor_pigammapi.h](#)
- [/Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactor_pigammapi.cc](#)

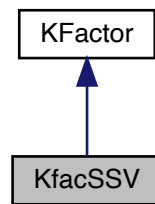
6.5 KfacSSV Class Reference

```
#include <kfactor_pigammarho.h>
```

Inheritance diagram for KfacSSV:



Collaboration diagram for KfacSSV:



Public Member Functions

- `vector< complex< double > > operator() (const KFacParams ¶ms) const`
- `string name () const`

6.5.1 Member Function Documentation

6.5.1.1 name()

```
string KfacSSV::name ( ) const [inline], [virtual]
```

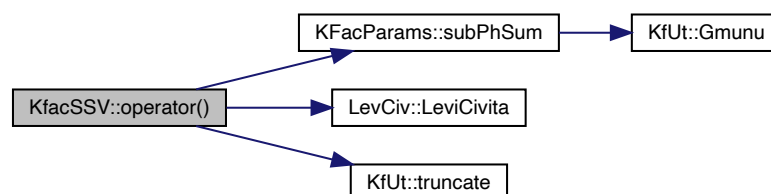
Implements [KFactor](#).

6.5.1.2 operator()

```
vector< complex< double > > KfacSSV::operator() (
    const KFacParams & params ) const [virtual]
```

Implements [KFactor](#).

Here is the call graph for this function:



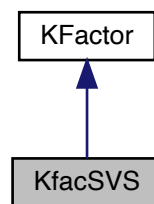
The documentation for this class was generated from the following files:

- /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactor_pigammarho.h
- /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactor_pigammarho.cc

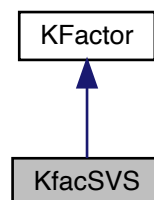
6.6 KfacSVS Class Reference

```
#include <kfactor_pigammapi.h>
```

Inheritance diagram for KfacSVS:



Collaboration diagram for KfacSVS:



Public Member Functions

- `vector< complex< double > > operator() (const KFacParams ¶ms) const`
- `string name () const`

6.6.1 Member Function Documentation

6.6.1.1 name()

```
string KfacSVS::name ( ) const [inline], [virtual]
```

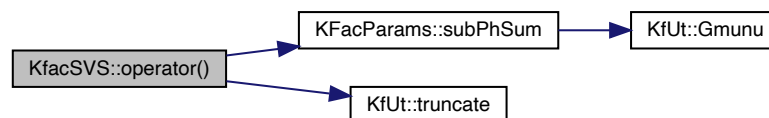
Implements [KFactor](#).

6.6.1.2 operator>()

```
vector< complex< double > > KfacSVS::operator() (
    const KFacParams & params ) const [virtual]
```

Implements [KFactor](#).

Here is the call graph for this function:



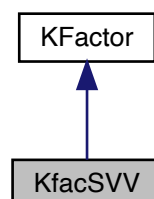
The documentation for this class was generated from the following files:

- [/Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactor_pigammapi.h](#)
- [/Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactor_pigammapi.cc](#)

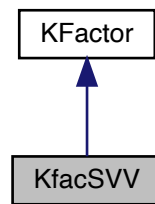
6.7 KfacSVV Class Reference

```
#include <kfactor_pigammapi.h>
```

Inheritance diagram for KfacSVV:



Collaboration diagram for KfacSVV:



Public Member Functions

- `vector< complex< double > > operator() (const KFacParams ¶ms) const`
- `string name () const`

6.7.1 Member Function Documentation

6.7.1.1 name()

```
string KfacSVV::name ( ) const [inline], [virtual]
```

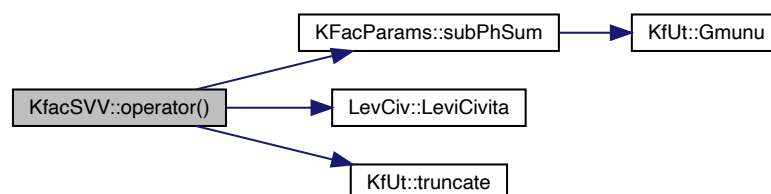
Implements [KFactor](#).

6.7.1.2 operator()

```
vector< complex< double > > KfacSVV::operator() (
    const KFacParams & params ) const [virtual]
```

Implements [KFactor](#).

Here is the call graph for this function:



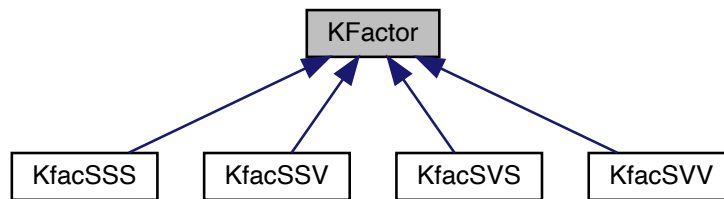
The documentation for this class was generated from the following files:

- [/Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactor_pigammarho.h](#)
- [/Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactor_pigammarho.cc](#)

6.8 KFactor Class Reference

```
#include <kfactor_pigammarho.h>
```

Inheritance diagram for KFactor:



Public Member Functions

- virtual [~KFactor](#) ()
- virtual [vector< complex< double > > operator\(\)](#) (const [KFacParams](#) ¶ms) const =0
- virtual string [name](#) () const =0

6.8.1 Constructor & Destructor Documentation

6.8.1.1 ~KFactor()

```
virtual KFactor::~KFactor ( ) [inline], [virtual]
```

6.8.2 Member Function Documentation

6.8.2.1 name()

```
virtual string KFactor::name ( ) const [pure virtual]
```

Implemented in [KfacSSV](#), [KfacSVV](#), [KfacSSS](#), and [KfacSVS](#).

6.8.2.2 operator()

```
virtual vector<complex<double> > KFactor::operator() (
    const KFacParams & params ) const [pure virtual]
```

Implemented in [KfacSSV](#), [KfacSVV](#), [KfacSSS](#), and [KfacSVS](#).

The documentation for this class was generated from the following file:

- [/Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactor_pigammarho.h](#)

6.9 Ph::phChars Struct Reference

```
#include <phase.h>
```

Public Member Functions

- bool [operator<](#) (const [phChars](#) &rhs) const

Data Fields

- Eigen::Vector3d [mom2](#)
- Eigen::Vector3d [mom1](#)
- map< [Ph::tripKey](#), complex< double > > [lam_phase](#)
- Eigen::MatrixXcd [r](#)

6.9.1 Member Function Documentation

6.9.1.1 operator<()

```
bool Ph::phChars::operator< (
    const phChars & rhs ) const
```

6.9.2 Field Documentation

6.9.2.1 lam_phase

```
map< Ph::tripKey , complex<double> > Ph::phChars::lam_phase
```

6.9.2.2 mom1

```
Eigen::Vector3d Ph::phChars::mom1
```

6.9.2.3 mom2

```
Eigen::Vector3d Ph::phChars::mom2
```

6.9.2.4 r

```
Eigen::MatrixXcd Ph::phChars::r
```

The documentation for this struct was generated from the following file:

- /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/[phase.h](#)

6.10 KfUt::ToArray Class Reference

```
#include <kfac_utils.h>
```

Static Public Member Functions

- static XMLArray::Array< int > [toArray](#) (Eigen::Vector3d input)
- static XMLArray::Array< int > [toArray](#) (Array1dO< int > input)

6.10.1 Member Function Documentation

6.10.1.1 toArray() [1/2]

```
XMLArray::Array< int > KfUt::ToArray::toArray (
    Eigen::Vector3d input ) [static]
```

Here is the caller graph for this function:



6.10.1.2 toArray() [2/2]

```
XMLArray::Array< int > KfUt::ToArray::toArray (
    ArrayIdO< int > input ) [static]
```

The documentation for this class was generated from the following files:

- /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/[kfac_utils.h](#)
- /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/[kfac_utils.cc](#)

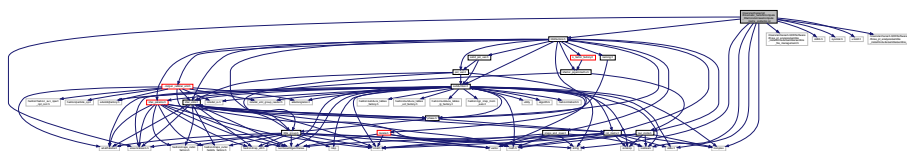
Chapter 7

File Documentation

7.1 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/exe/compute_matrix_↔ prefactor.cc File Reference

```
#include "lib/kfactors.h"  
#include "/Users/archanar/LQCDSoftware/three_pt_analysis/semble_install/include/semble/s  
_file_management.h"  
#include "/Users/archanar/LQCDSoftware/three_pt_analysis/semble_install/include/semble/s  
_meta.h"
```

Include dependency graph for compute_matrix_prefactor.cc:



Functions

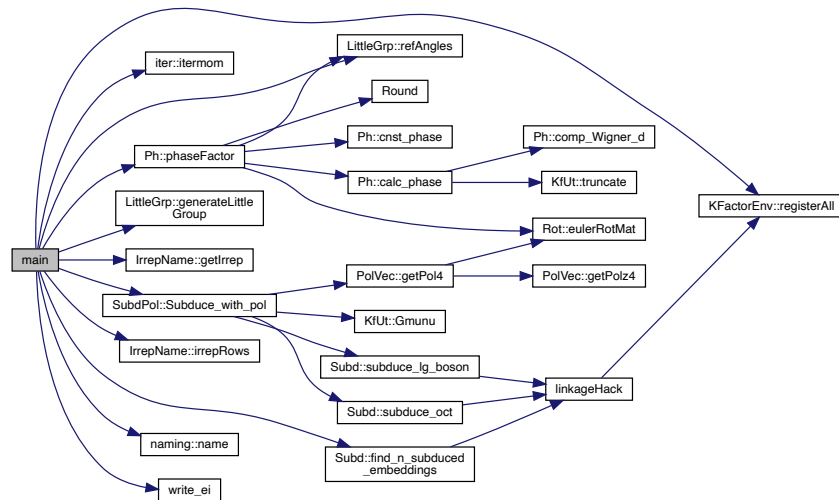
- int [main](#) (int argc, char **argv)

7.1.1 Function Documentation

7.1.1.1 main()

```
int main (  
    int argc,  
    char ** argv )
```

Here is the call graph for this function:



7.2 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/io/gen_redstar_xml.cc

File Reference

```
#include "gen_redstar_xml.h"
```

Functions

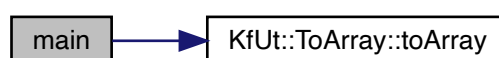
- int [main](#) (int argc, char **argv)

7.2.1 Function Documentation

7.2.1.1 main()

```
int main (
    int argc,
    char ** argv )
```

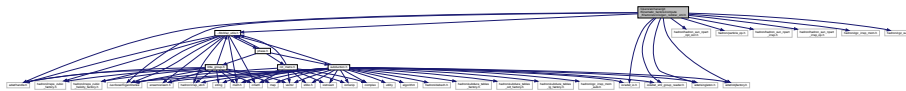
Here is the call graph for this function:



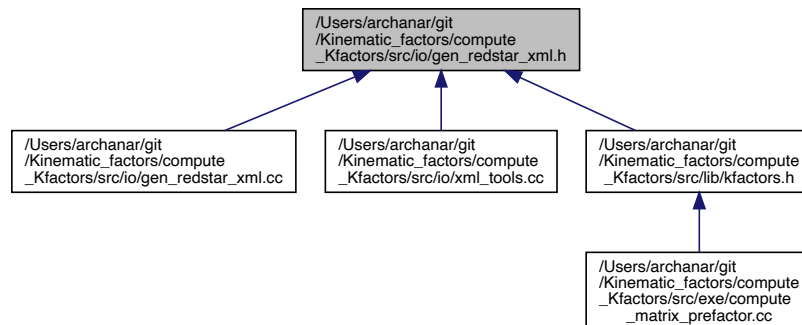
7.3 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/io/gen_redstar_xml.h File Reference

```
#include </usr/local/Eigen/Dense>
#include "io/adat_io.h"
#include "io/adat_xml_group_reader.h"
#include "hadron/hadron_sun_npart_npt_corr.h"
#include "hadron/particle_op.h"
#include "hadron/hadron_sun_npart_irrep.h"
#include "hadron/hadron_sun_npart_irrep_op.h"
#include "adat/singleton.h"
#include "adat/objfactory.h"
#include <adat/handle.h>
#include "hadron/cgc_irrep_mom.h"
#include "hadron/cgc_su3.h"
#include "../lib/kfac_utils.h"
```

Include dependency graph for gen_redstar_xml.h:



This graph shows which files directly or indirectly include this file:



Data Structures

- struct [hadron](#)

Functions

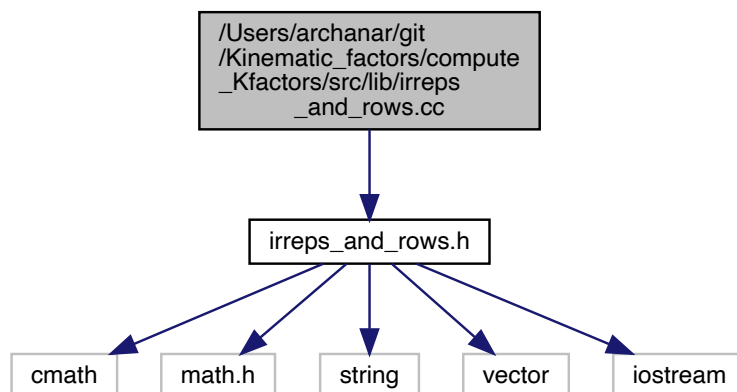
- void [write_ei](#) (XMLWriter &xml, const std::string &path, const Eigen::Vector3d &input)

7.3.1 Function Documentation

7.5 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/irreps_and_rows.cc File Reference

```
#include "irreps_and_rows.h"
```

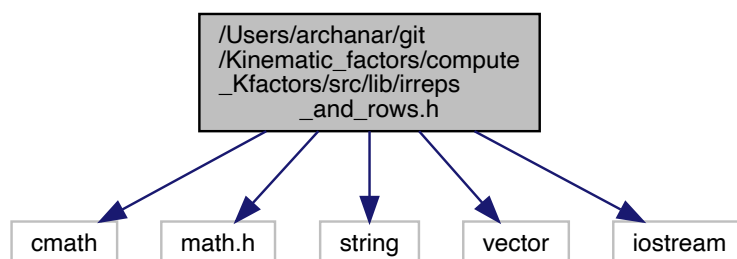
Include dependency graph for irreps_and_rows.cc:



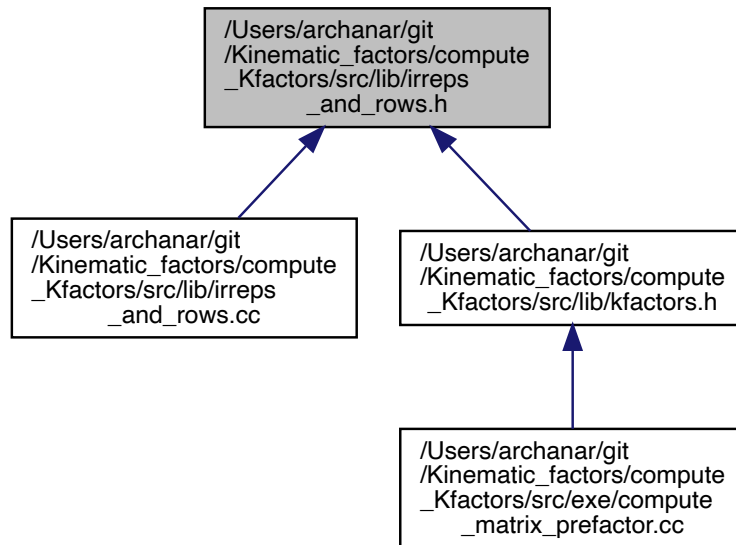
7.6 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/irreps_and_rows.h File Reference

```
#include <cmath>
#include "math.h"
#include <string>
#include <vector>
#include <iostream>
```

Include dependency graph for irreps_and_rows.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- [IrrepName](#)

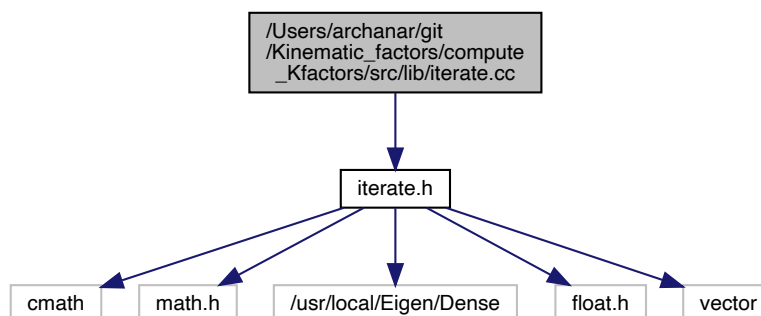
Functions

- `std::vector< std::string > IrrepName::getIrrep (int &twoJ, int &P, string &lg)`
- `int IrrepName::irrepRows (string &irrep)`

7.7 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/iterate.cc File Reference

```
#include "iterate.h"
```

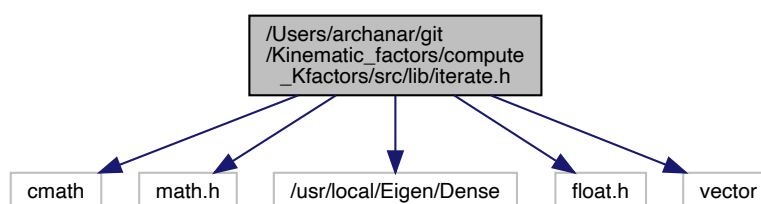
Include dependency graph for iterate.cc:



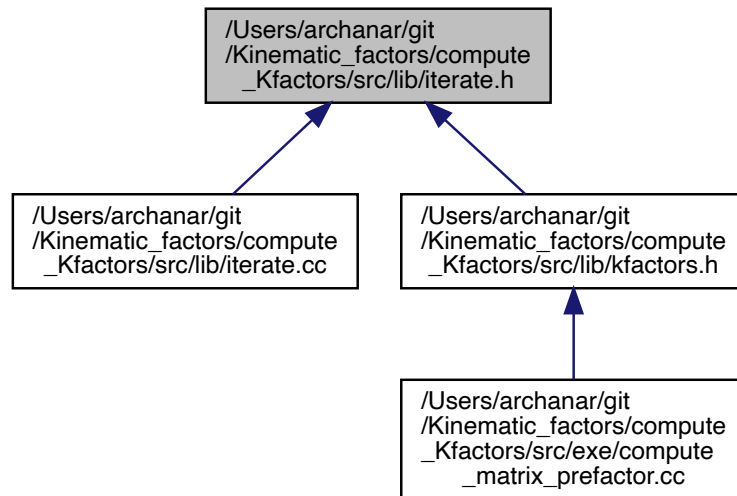
7.8 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/iterate.h File Reference

```
#include <cmath>
#include "math.h"
#include </usr/local/Eigen/Dense>
#include <float.h>
#include <vector>
```

Include dependency graph for iterate.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- [iter](#)

Functions

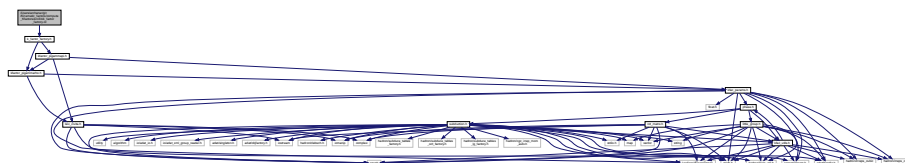
- `std::vector< Vector3d > iter::itermom (double max_mom)`

7.9 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/k_factor_factory.cc

File Reference

```
#include "k_factor_factory.h"
```

Include dependency graph for k_factor_factory.cc:



Namespaces

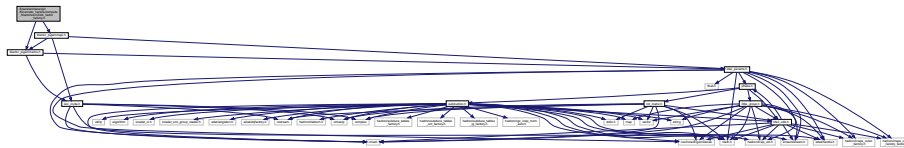
- [KFactorEnv](#)

Functions

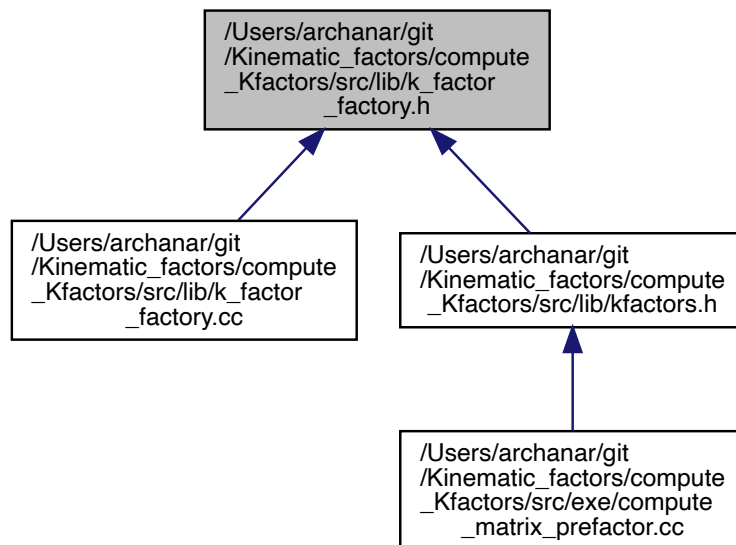
- bool [KFactorEnv::registerAll](#) ()

7.10 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/k_factor_factory.h File Reference

```
#include "kfactor_pigammarho.h"
#include "kfactor_pigammapi.h"
Include dependency graph for k_factor_factory.h:
```



This graph shows which files directly or indirectly include this file:



Namespaces

- [KFactorEnv](#)

Typedefs

- typedef SingletonHolder< ObjectFactory< [KFactor](#), string, TYPELIST_2(XMLReader &, const string &), [KFactor](#) (*)(XMLReader &, const string &), StringFactoryError > > [TheKFactorFactory](#)

Functions

- bool [KFactorEnv::registerAll\(\)](#)

7.10.1 Typedef Documentation

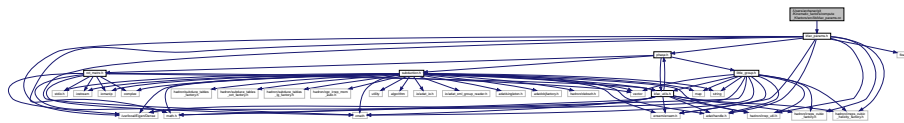
7.10.1.1 TheKFactorFactory

```
typedef SingletonHolder< ObjectFactory<KFactor, string, TYPELIST_2( XMLReader&, const string&),
KFactor* (*) (XMLReader&, const string&), StringFactoryError> > TheKFactorFactory
```

7.11 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfac_params.cc File Reference

```
#include "kfac_params.h"
```

Include dependency graph for kfac_params.cc:



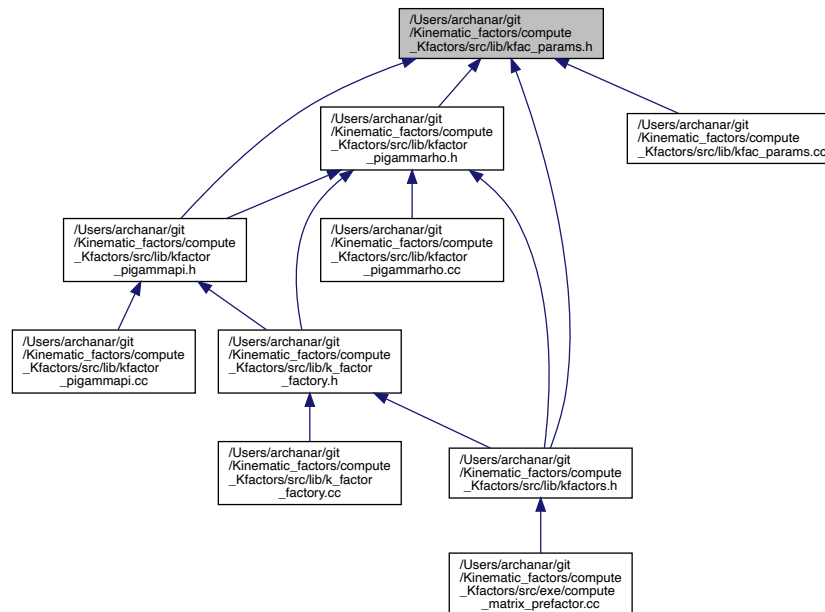
7.12 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfac_params.h File Reference

```
#include <cmath>
#include "math.h"
#include </usr/local/Eigen/Dense>
#include <float.h>
#include "phase.h"
#include <adat/handle.h>
#include "hadron/irreps_cubic_factory.h"
#include "hadron/irreps_cubic_helicity_factory.h"
#include "hadron/irrep_util.h"
#include "ensem/ensem.h"
```

Include dependency graph for kfac_params.h:



This graph shows which files directly or indirectly include this file:



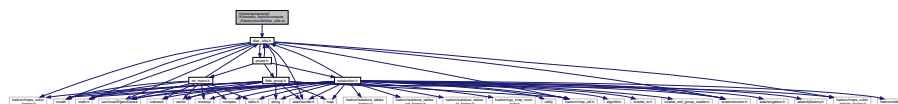
Data Structures

- class [KFacParams](#)

7.13 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfac_utils.cc File Reference

```
#include "kfac_utils.h"
```

Include dependency graph for kfac_utils.cc:



Namespaces

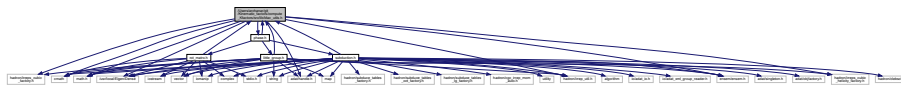
- [KfUt](#)

Functions

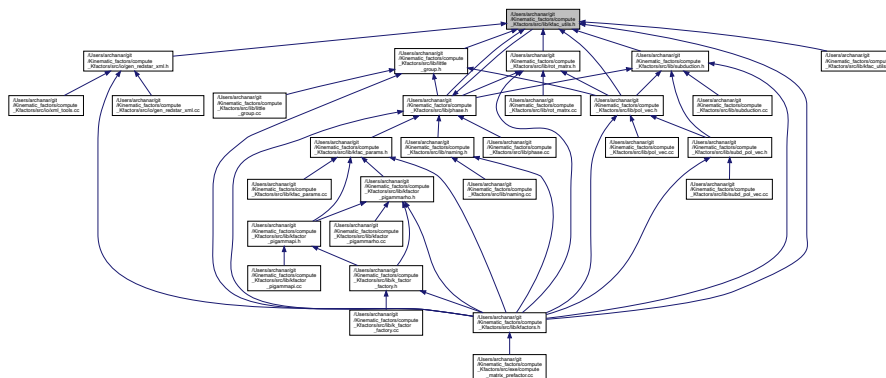
- double [KfUt::truncate](#) (double num, int precision)
- Eigen::MatrixXcd [KfUt::Gmunu](#) ()

7.14 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfac_utils.h File Reference

```
#include <cmath>
#include "math.h"
#include </usr/local/Eigen/Dense>
#include "phase.h"
#include <adat/handle.h>
#include "hadron/irreps_cubic_factory.h"
#include "hadron/irreps_cubic_helicity_factory.h"
#include "hadron/irrep_util.h"
#include "ensem/ensem.h"
Include dependency graph for kfac_utils.h:
```



This graph shows which files directly or indirectly include this file:



Data Structures

- class [KfUt::ToArray](#)

Namespaces

- [KfUt](#)

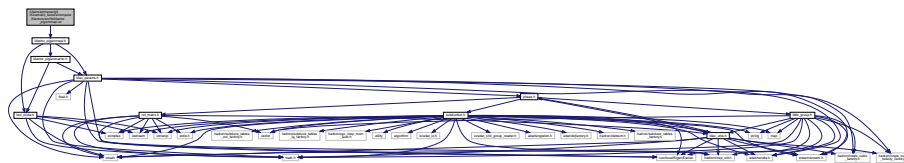
Functions

- double [KfUt::truncate](#) (double num, int precision)
- Eigen::MatrixXcd [KfUt::Gmunu](#) ()

7.15 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactor_pigammapi.cc File Reference

```
#include "kfactor_pigammapi.h"
```

Include dependency graph for kfactor_pigammapi.cc:



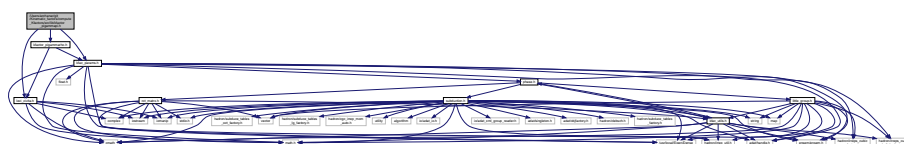
7.16 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactor_pigammapi.h File Reference

```
#include "kfacs_params.h"
```

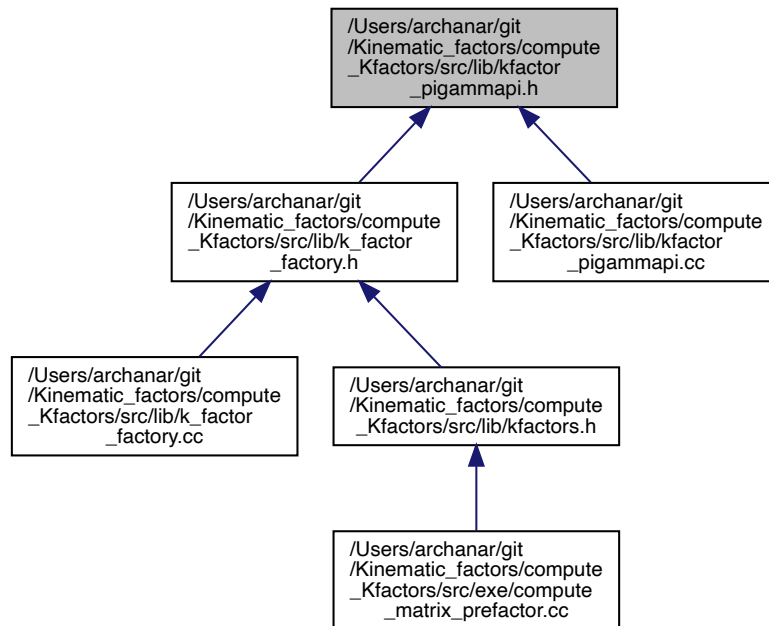
```
#include "levi_civita.h"
```

```
#include "kfactor_pigammapi.h"
```

Include dependency graph for kfactor_pigammapi.h:



This graph shows which files directly or indirectly include this file:



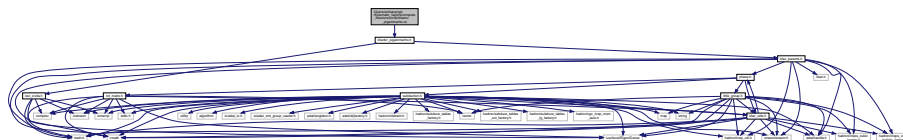
Data Structures

- class [KfacSVS](#)
- class [KfacSSS](#)

7.17 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactor_pigammapi.h File Reference

```
#include "kfactor_pigammapi.h"
```

Include dependency graph for kfactor_pigammapi.cc:

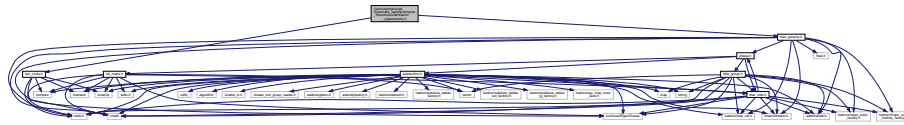


7.18 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactor_pigammapi.h File Reference

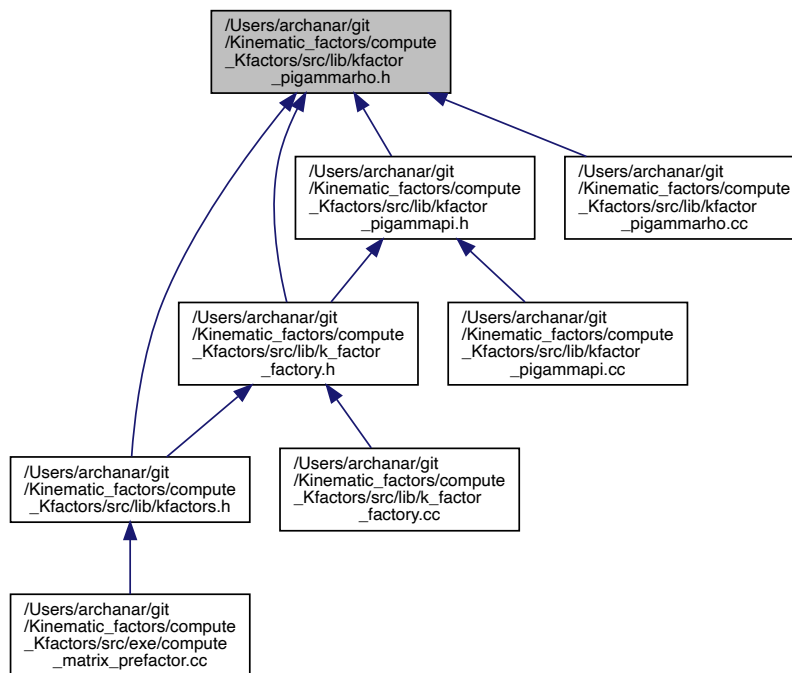
```
#include "kfac_params.h"
```

```
#include "levi_civita.h"
```

Include dependency graph for kfactor_pigammarho.h:



This graph shows which files directly or indirectly include this file:



Data Structures

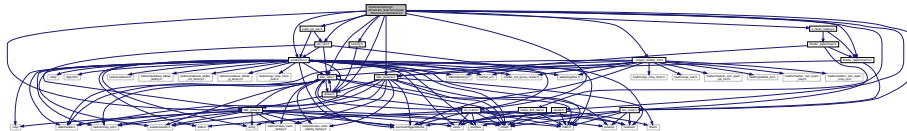
- class [KFactor](#)
- class [KfacSVV](#)
- class [KfacSSV](#)

7.19 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/kfactors.h File Reference

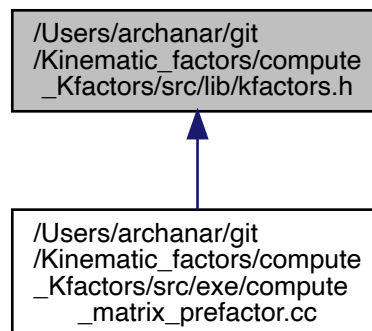
```
#include "subduction.h"
#include "subd_pol_vec.h"
#include "pol_vec.h"
#include "little_group.h"
#include "levi_civita.h"
```

```
#include "kfac_utils.h"
#include "rot_matrx.h"
#include "irreps_and_rows.h"
#include "phase.h"
#include "../io/gen_redstar_xml.h"
#include "k_factor_factory.h"
#include "kfac_params.h"
#include "kfactor_pigammarho.h"
#include "naming.h"
#include "iterate.h"
```

Include dependency graph for kfactores.h:



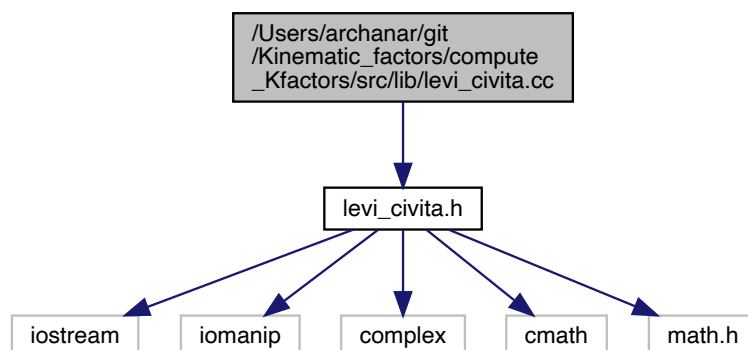
This graph shows which files directly or indirectly include this file:



7.20 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/levi_civita.cc File Reference

```
#include "levi_civita.h"
```

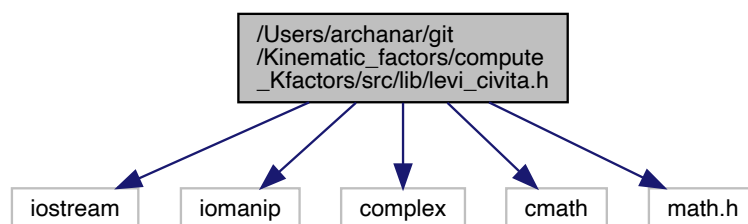

Include dependency graph for levi_civita.cc:



7.21 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/levi_civita.h File Reference

```
#include <iostream>
#include <iomanip>
#include <complex>
#include <cmath>
#include "math.h"
```

Include dependency graph for levi_civita.h:



Functions

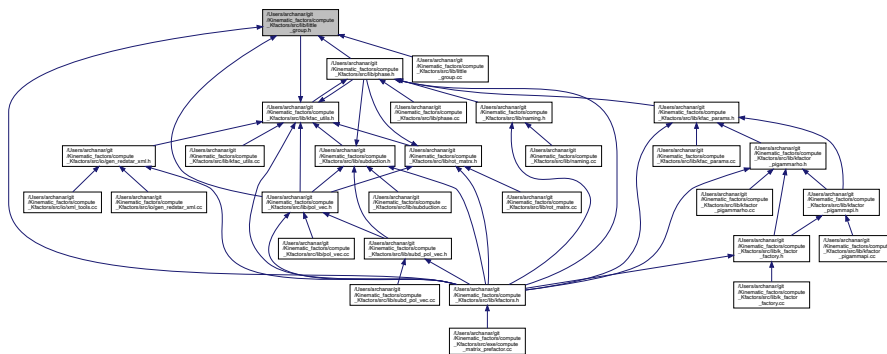
- string [LittleGrp::generateLittleGroup](#) (Eigen::Vector3d &mom_)
- std::vector< double > [LittleGrp::refAngles](#) (Eigen::Vector3d mom1)

7.23 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/little_group.h File Reference

```
#include <vector>
#include <map>
#include <string>
#include <cmath>
#include "math.h"
#include </usr/local/Eigen/Dense>
#include "kfac_utils.h"
#include <adat/handle.h>
#include "hadron/irreps_cubic_factory.h"
#include "hadron/irreps_cubic_helicity_factory.h"
#include "hadron/irrep_util.h"
#include "ensem/ensem.h"
Include dependency graph for little_group.h:
```



This graph shows which files directly or indirectly include this file:



Namespaces

- [LittleGrp](#)

Functions

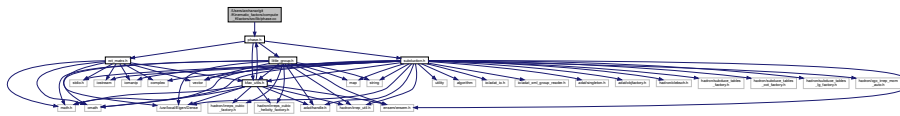
- string [LittleGrp::generateLittleGroup](#) (Eigen::Vector3d &mom_)
- std::vector< double > [LittleGrp::refAngles](#) (Eigen::Vector3d mom1)

Functions

- string [naming::name](#) (int npt, [Ph::tripKey](#) two_abs_lam, Vector3d mom1, Vector3d mom_curr, Vector3d mom3, [irrep_label](#) rep1, [irrep_label](#) rep_curr, [irrep_label](#) rep3, string LG1, string LG_curr, string LG3, string lev1, string lev3)

7.26 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/phase.cc File Reference

#include "phase.h"
 Include dependency graph for phase.cc:



Functions

- double [Round](#) (double x)

7.26.1 Function Documentation

7.26.1.1 Round()

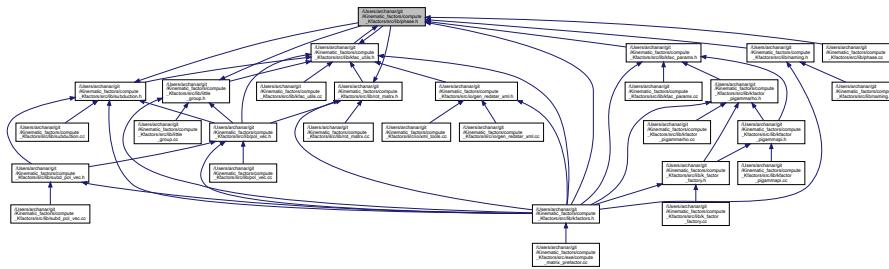
```
double Round (
    double x )
```

7.27 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/phase.h File Reference

#include "rot_matrx.h"
#include "little_group.h"
#include "kfac_utils.h"
#include "subduction.h"
Include dependency graph for phase.h:



This graph shows which files directly or indirectly include this file:



Data Structures

- struct [Ph::phChars](#)

Namespaces

- [Ph](#)

Typedefs

- typedef std::tuple< int, int, int > [Ph::tripKey](#)

Functions

- double [Round](#) (double x)
- [Ph::phChars](#) [Ph::phaseFactor](#) (int twoJ1, int twoJ2, int twoJCurr, Eigen::Vector3d mom1, Eigen::Vector3d mom2, bool compute)
- std::complex< double > [Ph::comp_Wigner_d](#) (int twoJ, int twolam1, int twolam2, double a1, double b1, double c1, double a2, double b2, double c2, int n)
- map< [Ph::tripKey](#), complex< double > > [Ph::calc_phase](#) (int twoJ1, int twoJ2, int twoJCurr, double mom1_←_sq, double mom2_sq, double mom_curr_sq, vector< double > r_mom1, vector< double > r_n_mom1, vector< double > r_mom2, vector< double > r2, vector< double > r_mom_curr, vector< double > r_n_←_mom_curr)
- map< [Ph::tripKey](#), complex< double > > [Ph::cnst_phase](#) (int twoJ1, int twoJ2, int twoJCurr)

7.27.1 Function Documentation

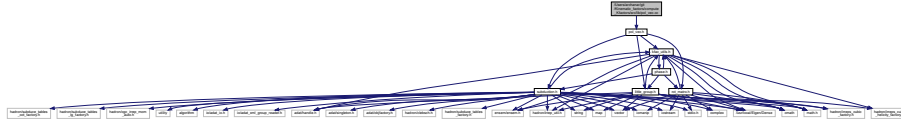
7.27.1.1 Round()

```
double Round (
    double x )
```

7.28 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/pol_vec.cc File Reference

```
#include "pol_vec.h"
```

Include dependency graph for pol_vec.cc:



Namespaces

- [PolVec](#)

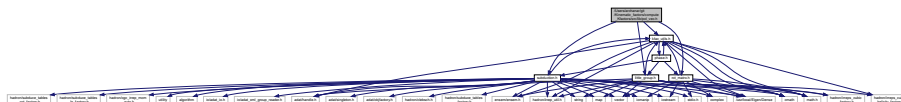
Functions

- Eigen::MatrixXcd [PolVec::getPolz4](#) (double &mom_sq, const int &two_helicity, double &mass_sq, bool &curr)
- Eigen::MatrixXcd [PolVec::getPol4](#) (double &mom_sq, const int &two_helicity, double &mass_sq, double &phi, double &theta, double &psi, bool curr)

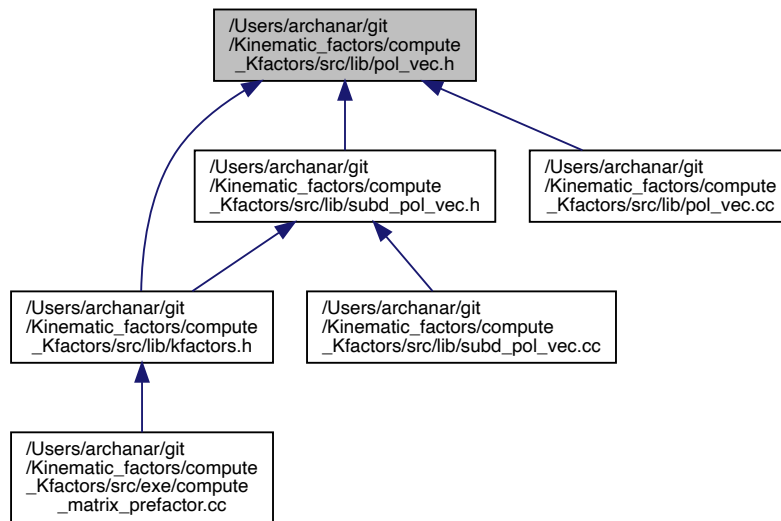
7.29 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/pol_vec.h File Reference

```
#include "kfac_utils.h"
#include "rot_matrx.h"
#include "little_group.h"
#include "subduction.h"
```

Include dependency graph for pol_vec.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- [PolVec](#)

Functions

- `Eigen::MatrixXcd PolVec::getPolz4` (double &mom_sq, const int &two_helicity, double &mass_sq, bool &curr)
- `Eigen::MatrixXcd PolVec::getPol4` (double &mom_sq, const int &two_helicity, double &mass_sq, double &phi, double &theta, double &psi, bool curr)

7.30 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/rot_matrx.cc File Reference

```
#include "rot_matrx.h"
```

Include dependency graph for `rot_matrx.cc`:



Namespaces

- [Rot](#)

Functions

- Eigen::MatrixXd [Rot::eulerRotMat](#) (double alpha, double beta, double gamma)

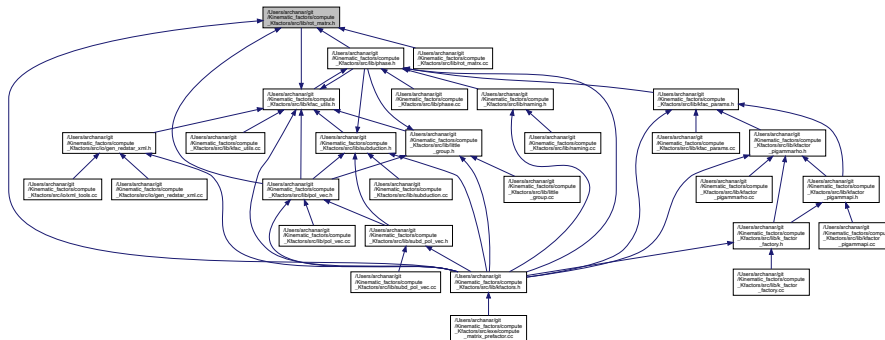
7.31 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/rot_mtx.h File Reference

```
#include "kfac_utils.h"
#include <iostream>
#include <iomanip>
#include <complex>
#include <cmath>
#include "math.h"
#include <stdio.h>
#include </usr/local/Eigen/Dense>
#include <vector>
```

Include dependency graph for rot_mtx.h:



This graph shows which files directly or indirectly include this file:



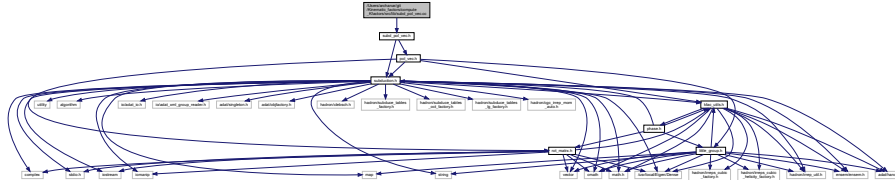
Namespaces

- [Rot](#)

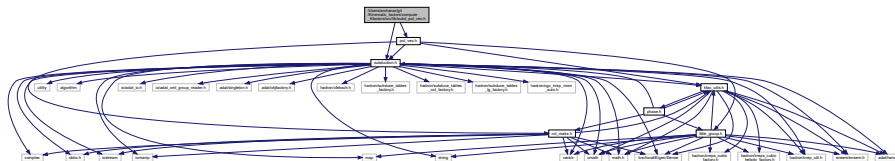
Functions

- Eigen::MatrixXd [Rot::eulerRotMat](#) (double alpha, double beta, double gamma)

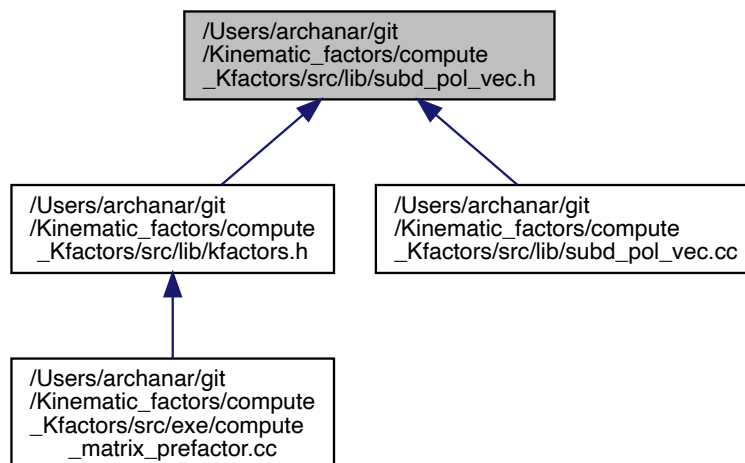
```
#include "subd_pol_vec.h"
Include dependency graph for subd_pol_vec.cc:
```



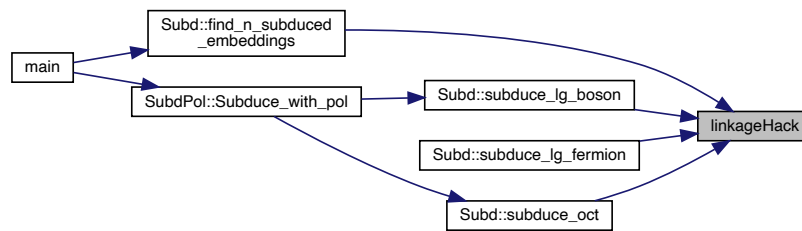
```
#include "subduction.h"
#include "pol_vec.h"
Include dependency graph for subd_pol_vec.h:
```



This graph shows which files directly or indirectly include this file:



Here is the caller graph for this function:



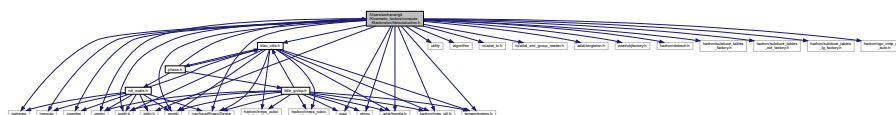
7.35 /Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/subduction.h File Reference

```

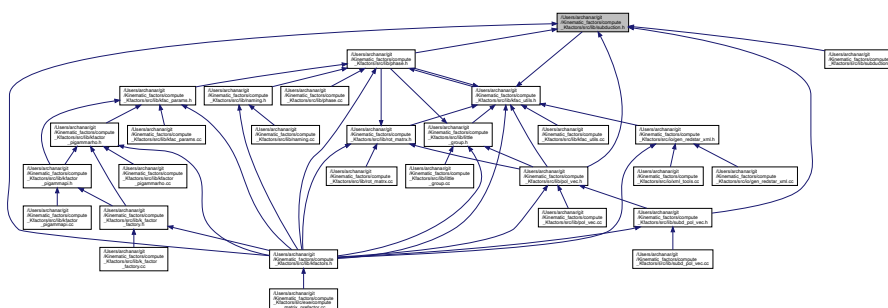
#include <vector>
#include <iostream>
#include <iomanip>
#include <map>
#include <string>
#include <complex>
#include <utility>
#include <algorithm>
#include <cmath>
#include "math.h"
#include <stdio.h>
#include </usr/local/Eigen/Dense>
#include "io/adat_io.h"
#include "io/adat_xml_group_reader.h"
#include "adat/singleton.h"
#include "adat/objfactory.h"
#include <adat/handle.h>
#include "hadron/clebsch.h"
#include "hadron/subduce_tables_factory.h"
#include "hadron/subduce_tables_oct_factory.h"
#include "hadron/subduce_tables_lg_factory.h"
#include "hadron/cgc_irrep_mom_auto.h"
#include "hadron/irrep_util.h"
#include "ensem/ensem.h"
#include "kfac_utils.h"

```

Include dependency graph for subduction.h:



This graph shows which files directly or indirectly include this file:



Data Structures

- struct [irrep_label](#)

Namespaces

- [Subd](#)

Functions

- `map< int, complex< double > > Subd::subduce_lg_boson (const irrep_label &irrep, const string &little_group)`
- `map< int, complex< double > > Subd::subduce_lg_fermion (const irrep_label &irrep, const string &little_group)`
- `map< int, complex< double > > Subd::subduce_oct (const irrep_label &irrep)`
- `int Subd::find_n_subduced_embeddings (const string &group, const string &irrep, int twoJ, int eta_tilde)`

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[/Users/archanar/git/Kinematic_factors/compute_Kfactors/src/io/gen_redstar_xml.cc,](#)
[42](#) [/Users/archanar/git/Kinematic_factors/compute_Kfactors/src/lib/phase.h,](#)
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