

Updates and Usefulness of SQL MARATHONTargetInfo

Positron correction information in SQL

name	positron_par_1	positron_err_1	positron_par_2	positron_err_2	positron_err_covariance
Tritium	-2.704	0.0059	-7.652	0.0942	-0.0231
Deuterium	0.088	0.007	8.447	0.33	0
Hydrogen	0.079	0.012	8.58	0.66	0
Helium-3	-2.573	0.0071	-7.862	0.1036	-0.0263

Density correction information in SQL

name	density_par_0	density_err_0	density_CV_0	density_par_1	density_err_1	density_CV_1	density_par_2	density_err_2	density_CV_2
Tritium	1	1.87e-05	-3.2e-06	-0.00749	6.78e-07	1.12e-07	0.000139	1.01e-09	-2.57e-08
Deuterium	1	3.3e-05	-5.44e-06	-0.00665	1.03e-06	1.86e-07	0.000115	1.42e-09	-3.74e-08
Hydrogen	1	3.52e-05	-5.66e-06	-0.00853	1.08e-06	1.9e-07	0.000153	1.48e-09	-3.91e-08
Helium-3	1	2.27e-05	-3.88e-06	-0.00475	8.29e-07	1.34e-07	8.69e-05	1.23e-09	-3.13e-08

Thank you Tong!! For providing all of this
information

Density Correction

- SQLanalysis header file!
 - DensityCor()
 - Vector(run #)
 - Correction factor
 - Error
 - Double
 - Correction factor
 - Pointer to error
 - Vector(target)
 - Works for a few abbreviation
 - Correction factor
 - Error

```
[jbane@utkjlalab ~]$ analyzer -l
analyzer [0] .L ~/headers/SQLanalysis.h
analyzer [1] Target = GetT
GetTarget
GetTargetInfo
GetTimeStamp
analyzer [1] Target = GetTarget(1210)
(TargetInfo &) @0x7f0d9e7ab8e8
analyzer [2] Target.name
(TString &) "Helium-3"[8]
analyzer [3] vector<double> dens_cor = DensityCor(1210);
          current_id          current          charge
                0                20.12                33273
analyzer [4] dens_cor[0]
(__gnu_cxx::__alloc_traits<std::allocator<double> >::value_type) 1.13075
analyzer [5] dens_cor[1]
(__gnu_cxx::__alloc_traits<std::allocator<double> >::value_type) 0.00153220
[jbane@utkjlalab ~]$ analyzer -l
analyzer [0] .L ~/headers/SQLanalysis.h
analyzer [1]
analyzer [1] TargetInfo TI = GetTarget(1214);
analyzer [2] TI.name
(TString &) "Deuterium"[9]
analyzer [3] double err;
analyzer [4] double dens_cor=DensityCor(err,1214);
          current_id          current          charge
                0                20.38                19808.3
analyzer [5] dens_cor
(double) 1.18329
analyzer [6] err
(double) 0.00232022
analyzer [7] █

[jbane@utkjlalab ~]$ analyzer -l
analyzer [0] .L ~/headers/SQLanalysis.h
analyzer [1] DensityCor("H3")
(std::vector<double>) { 1.23889, 0.00217059 }
analyzer [2] DensityCor("T3")
(std::vector<double>) { 1.23889, 0.00217059 }
analyzer [3] DensityCor("Tritium")
(std::vector<double>) { 1.23889, 0.00217059 }
analyzer [4] DensityCor("D2")
(std::vector<double>) { 1.20784, 0.00314236 }
analyzer [5] DensityCor("He3")
(std::vector<double>) { 1.15087, 0.00237460 }
analyzer [6] DensityCor("H")
(std::vector<double>) { 1.26938, 0.00286116 }
analyzer [7] █
```

Positron correction

- `GetPosCorFactor()`
 - Double
 - Returns the correction factor
 - Needs x, a pointer to the error, run # or target
 - Vector
 - Returns a vector of [correction, error]
 - Needs x, and run # or target
 - Struct of the DB info

```
[jbane@utkjlabs ~]$ analyzer -l
analyzer [0] .L ~/headers/SQLanalysis.h
analyzer [1] double err
(double) 0.00000
analyzer [2] GetPosCorFactor(0.25,err,0,"He3")
(double) 0.0112656
analyzer [3] err
(double) 0.000232247
analyzer [4] GetPosCorFactor(0.25,0,"He3")
(std::vector<double>) { 0.0112656, 0.000232247 }
analyzer [5] █
```

```
analyzer [5] PC = GetPosInfo(1210)
(PositronCor &) @0x7fe6c41a78f0
analyzer [6] PC.
PositronCor
covariance
err1
err2
operator=
par1
par2
~PositronCor
analyzer [6] PC.err1
(double) 0.00710000
```