

Polarimetry

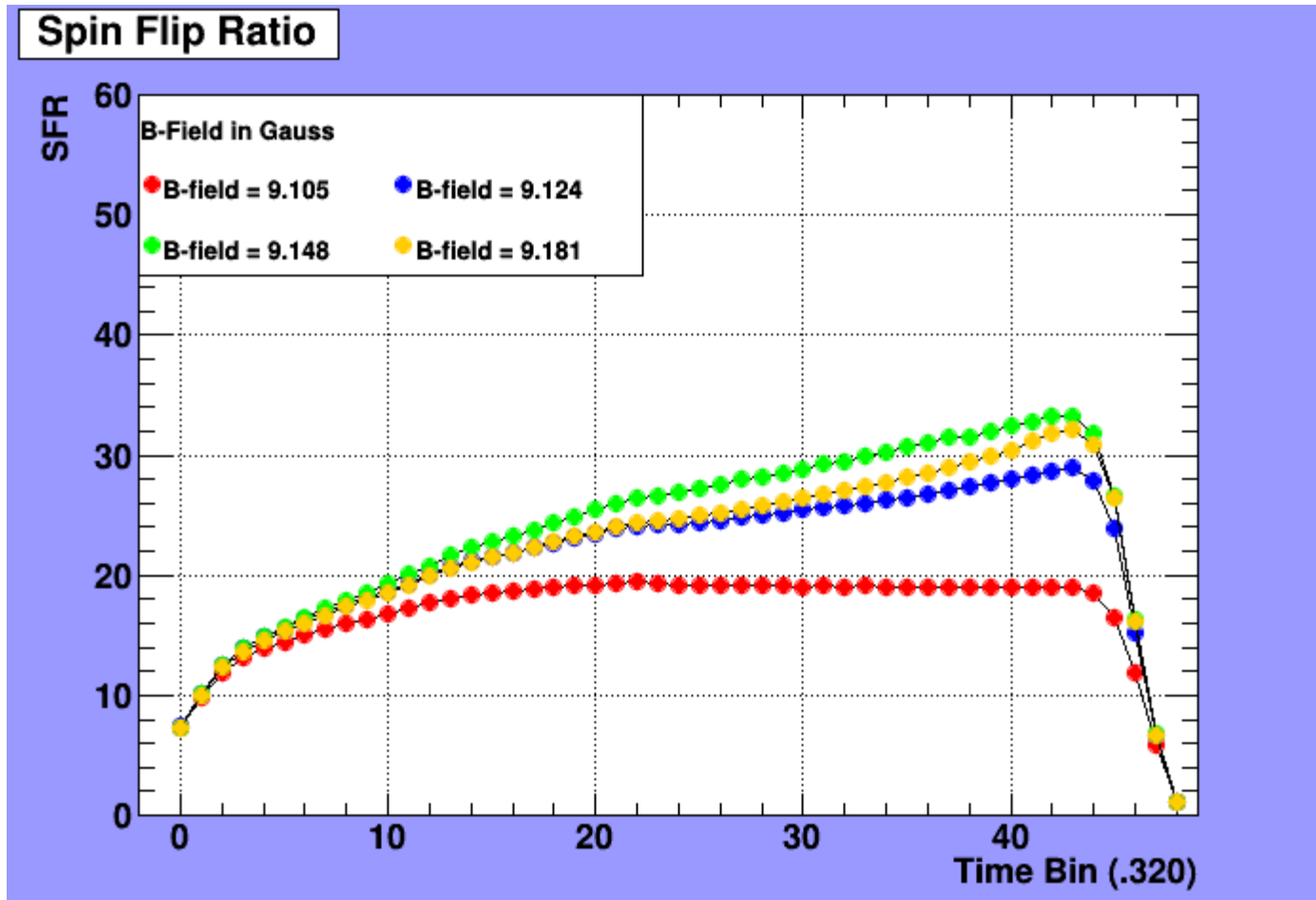
9-23-2015

n³He Experiment

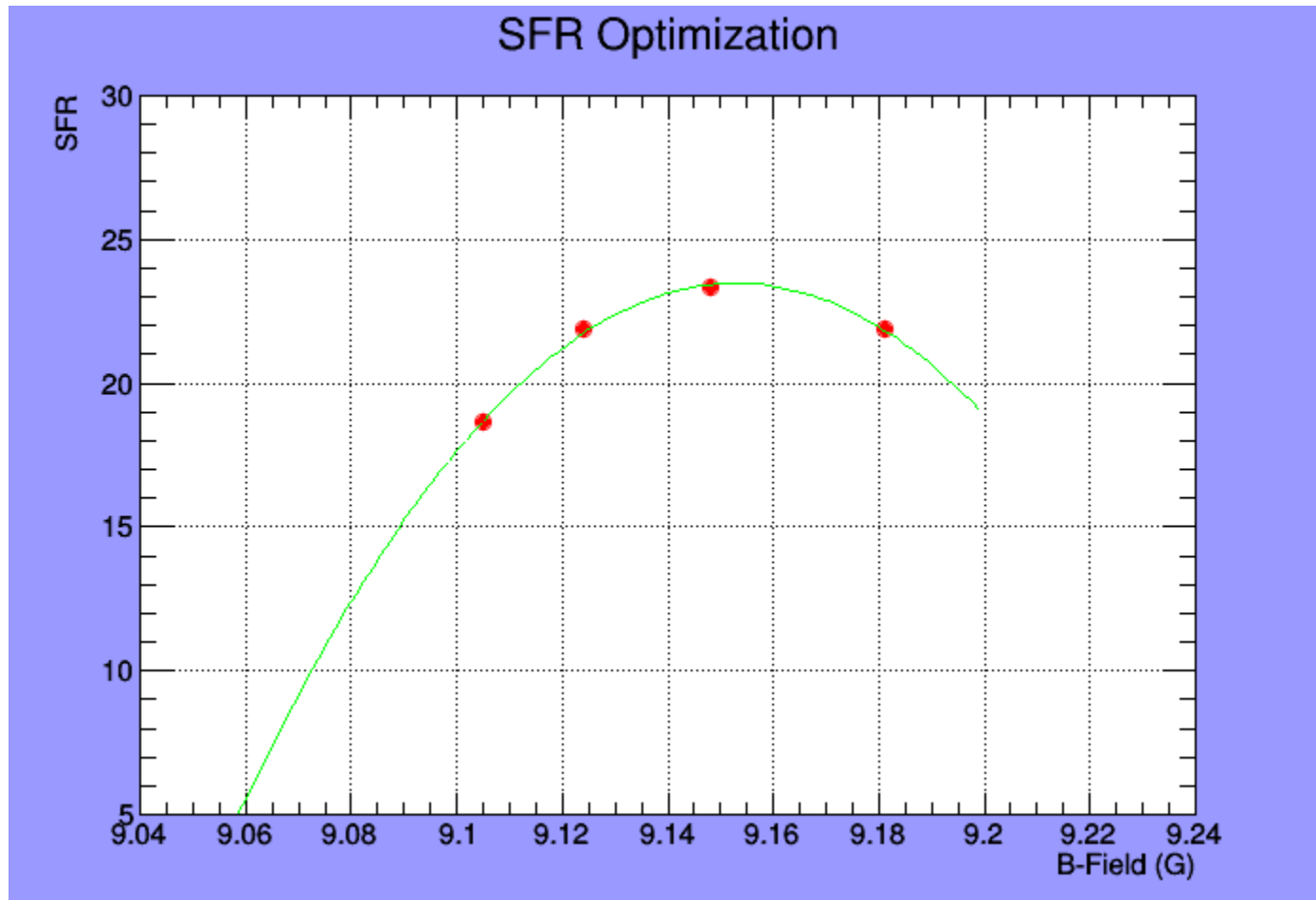
Data Runs

<i>Item</i>	<i>FGV</i>	<i>By1</i>	<i>By2</i>	<i>Run Numbers</i>	<i>Description</i>	<i>Spin</i>	<i>SFR</i>	<i>Notes</i>
1	486	9.148		46635 - 46637				pedestal
2	486	9.148		46638 - 46640				pedestal
3	486	9.153		46656 - 46658				pedestal (46657 is bad)
4	486	9.148		46623 - 46625	Polarized Cell	up		(no data on 46623)
5	486	9.181		46629 - 46631	Polarized Cell	up		
6	486	9.124		46632 - 46634	Polarized Cell	up		Data in blue optimize SFR vs changes in guide field
7	486	9.105		46641 - 46642	Polarized Cell	up		
8		9.153		46644 - 46646	Polarized Cell	up		Run at optimal B
9		9.153		46647 - 46649	Polarized Cell	dn		AFP1
10		9.153		46650 - 46652	Polarized Cell	up		AFP2
11		9.153		46653 - 46655				de-polarized cell

Optimization of SFR



Optimization of SFR



Optimization Data

46642	9.105	18.6256
46633	9.124	21.8831
46624	9.148	23.3098
46630	9.181	21.8824

Minimizer is Minuit / Migrad

Chi2 = 0.0421075

NDf = 1

Edm = 1.34713e-07

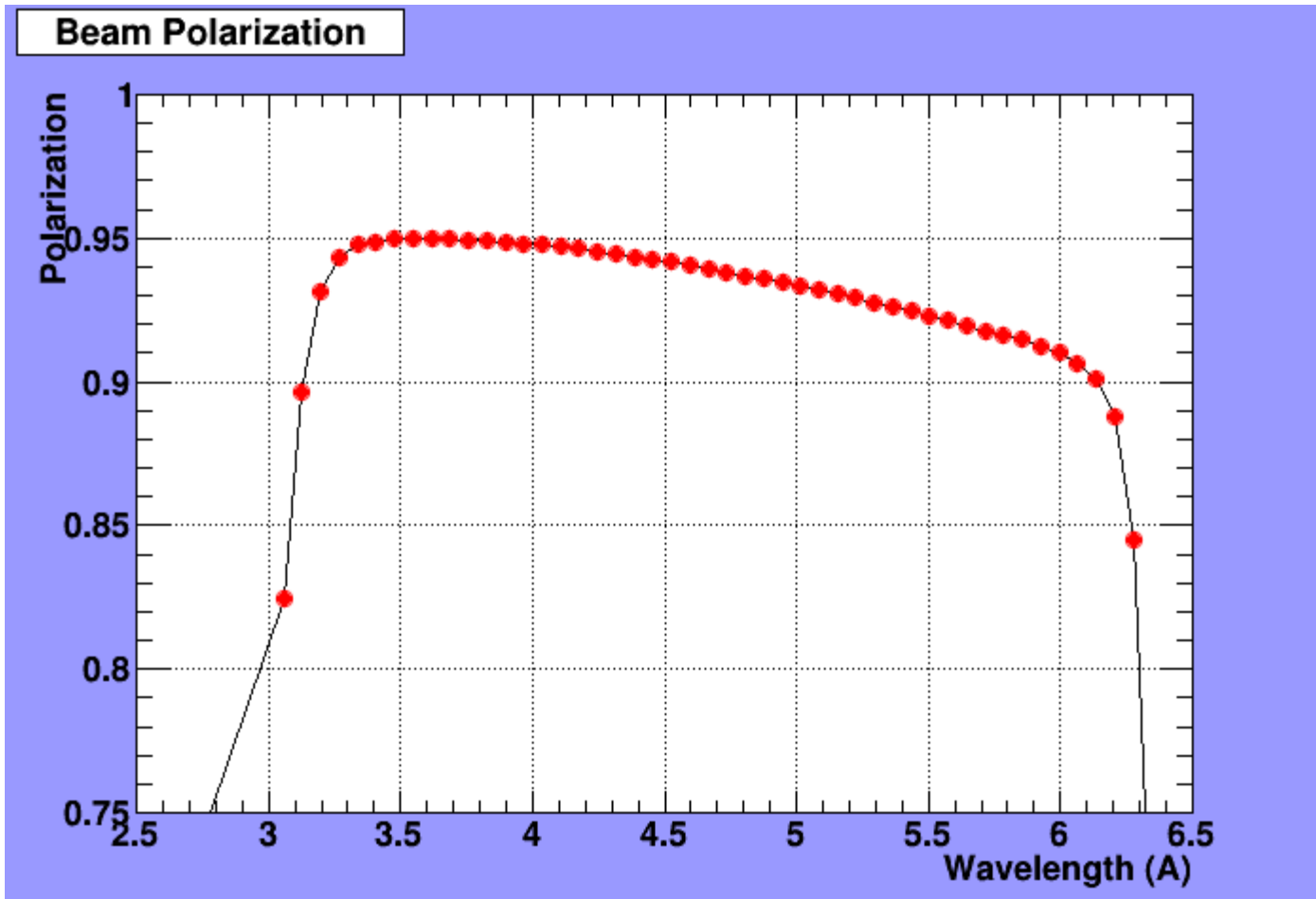
NCalls = 294

coefficient = 2076.32 +/- 161.573

best_fit = 9.15303 +/- 0.00113188

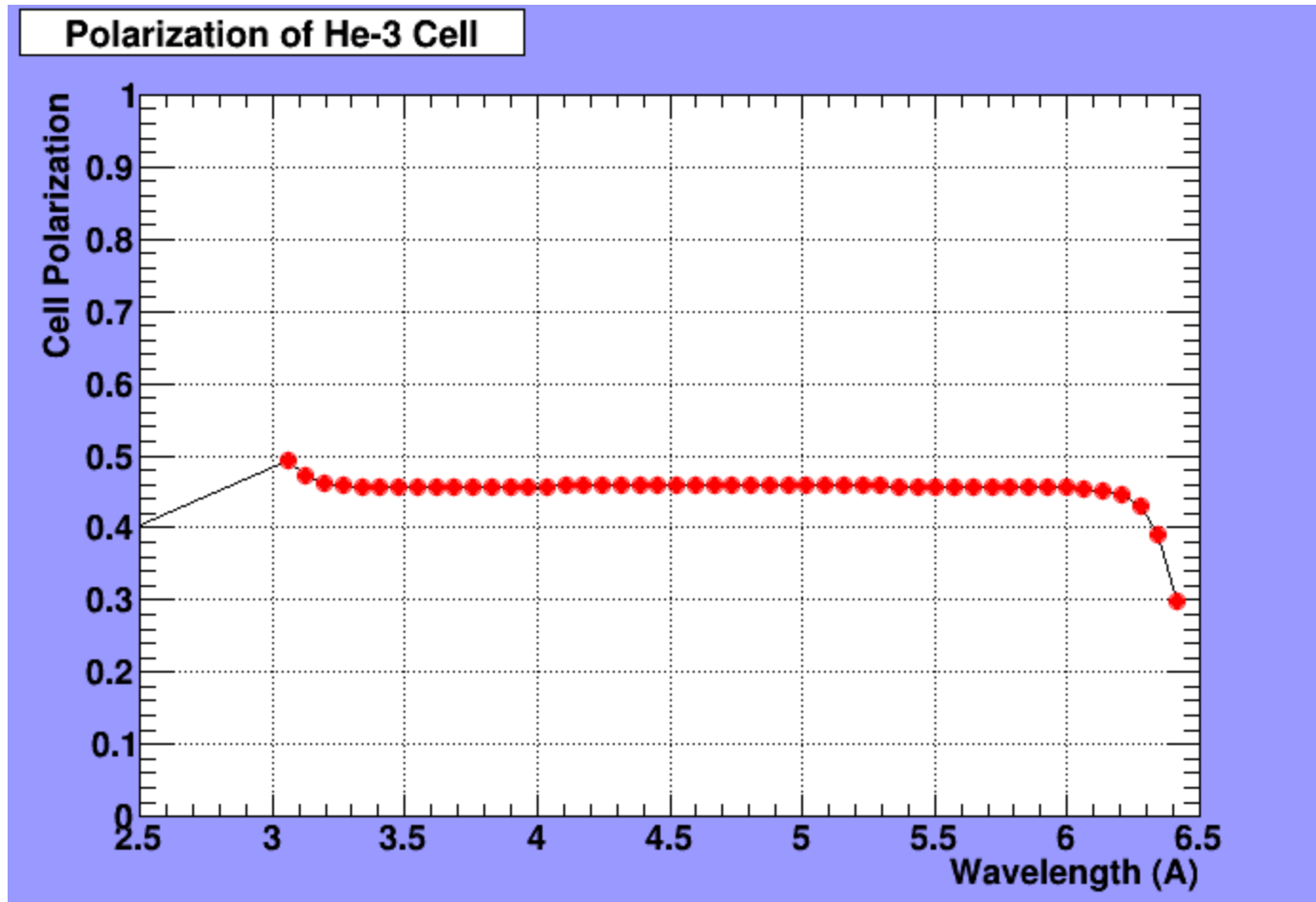
best_sfr = 23.4793 +/- 0.164675

Beam Polarization



Dipol.cc(46645, 46654, 46658)

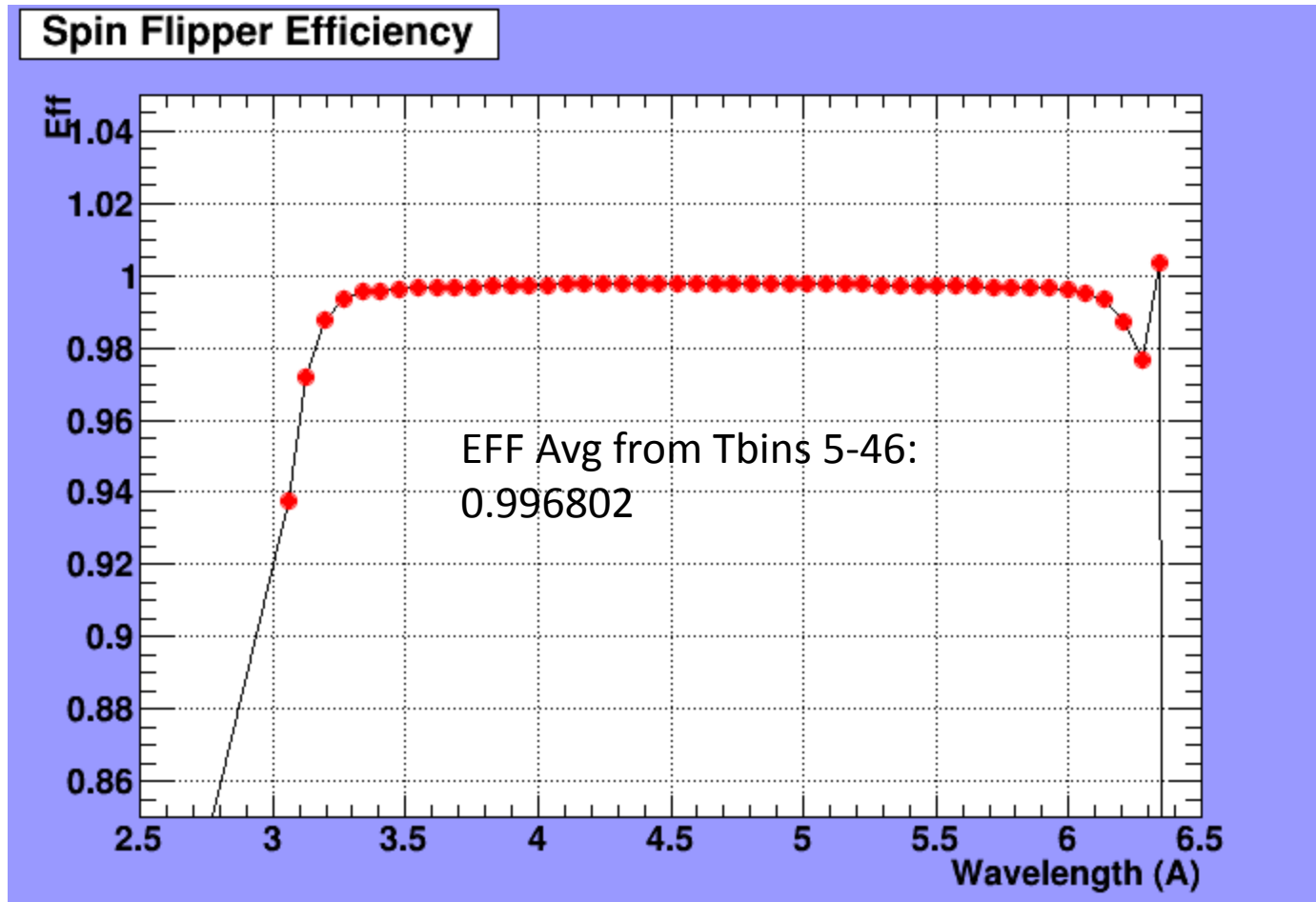
Cell Polarization



dihep.cc(46645, 46654, 46658)

Cell polarized in optics lab with only one operational laser.

Spin Flipper Efficiency



Dirfsf.cc(46645, 46648, 46651, 46658)