prova

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This documents follows the first version, giving an example of how the calculations on TF, SF and RF data are applied in R to the raw data. I will skip the descriptive part of the database focusing straight to the output values. the attached *Griffin\_20140424.xls* file contains the fieldwork data I will use as example for the calculations.  
The main outcome from this work has been finding out a bug in the script that reads the .xls files (all the samples starting from November 2013) which affected the N lab data. Even if it converted correctly them from the Nx concentration to N, subtracting the blanks and making 0 any negative values, the script ultimately copied the raw lab data in the database, ignoring the transformations. *Question for Kate*: the script subtract the blanks from the values no matter what the mean blank value is. This means that if the value is negative it will increase the lab value of the samples (twice minus makes +). Is this OK or should I makes blanks always >=0?

# Part 1. From paper to database: Griffin.SQLite

The scripts converting the raw field and lab data into values have been written by Mike Spencer. I will show which information is contained in the SQLite db *Griffin.SQlite* and briefly describe the calculations made to obtain the data written into the **fielddata** and **labdata** tables.

## Example sampling date

dbGetQuery(db, "SELECT date, sample, site, variable, vals FROM fielddata WHERE (variable IS 'through vol' OR variable IS 'through depth' OR variable IS 'stem vol' OR variable IS 'precip depth') AND (date = '2014-04-24') AND (site IS 'Treatment' OR site IS 'Both') ORDER BY variable DESC")

## date sample site variable vals  
## 1 2014-04-24 T10T1 Treatment through vol 29.158407  
## 2 2014-04-24 T10T2 Treatment through vol 34.635373  
## 3 2014-04-24 T10T3 Treatment through vol 25.075143  
## 4 2014-04-24 T11T1 Treatment through vol 28.899235  
## 5 2014-04-24 T11T2 Treatment through vol 28.899235  
## 6 2014-04-24 T11T3 Treatment through vol 44.195602  
## 7 2014-04-24 T12T1 Treatment through vol 23.163098  
## 8 2014-04-24 T12T2 Treatment through vol 16.516182  
## 9 2014-04-24 T12T3 Treatment through vol 26.629962  
## 10 2014-04-24 T10T1 Treatment through depth 15.713542  
## 11 2014-04-24 T10T2 Treatment through depth 18.665093  
## 12 2014-04-24 T10T3 Treatment through depth 13.513060  
## 13 2014-04-24 T11T1 Treatment through depth 15.500574  
## 14 2014-04-24 T11T2 Treatment through depth 15.432522  
## 15 2014-04-24 T11T3 Treatment through depth 23.600957  
## 16 2014-04-24 T12T1 Treatment through depth 12.423903  
## 17 2014-04-24 T12T2 Treatment through depth 8.945571  
## 18 2014-04-24 T12T3 Treatment through depth 14.350956  
## 19 2014-04-24 T10S1 Treatment stem vol 0.285112  
## 20 2014-04-24 T10S2 Treatment stem vol 4.646845  
## 21 2014-04-24 T10S3 Treatment stem vol 7.554667  
## 22 2014-04-24 T11S1 Treatment stem vol 27.182466  
## 23 2014-04-24 T11S2 Treatment stem vol 11.916400  
## 24 2014-04-24 T11S3 Treatment stem vol 9.735534  
## 25 2014-04-24 T12S1 Treatment stem vol 22.093777  
## 26 2014-04-24 T12S2 Treatment stem vol 1.012067  
## 27 2014-04-24 T12S3 Treatment stem vol 1.739023  
## 28 2014-04-24 C30D1 Both precip depth 2.107019  
## 29 2014-04-24 C30D2 Both precip depth 3.750458  
## 30 2014-04-24 C31D1 Both precip depth 1.588548

dbGetQuery(db, "SELECT date, sample, site, variable, vals FROM labdata WHERE date = '2014-04-24' ORDER BY variable DESC")

## date sample site variable vals  
## 1 2014-04-24 C10T1 Control litter mass NA  
## 2 2014-04-24 C10T2 Control litter mass NA  
## 3 2014-04-24 C10T3 Control litter mass NA  
## 4 2014-04-24 C11T1 Control litter mass NA  
## 5 2014-04-24 C11T2 Control litter mass NA  
## 6 2014-04-24 C11T3 Control litter mass NA  
## 7 2014-04-24 C12T1 Control litter mass NA  
## 8 2014-04-24 C12T2 Control litter mass NA  
## 9 2014-04-24 C12T3 Control litter mass NA  
## 10 2014-04-24 T10T1 Treatment litter mass NA  
## 11 2014-04-24 T10T2 Treatment litter mass NA  
## 12 2014-04-24 T10T3 Treatment litter mass NA  
## 13 2014-04-24 T11T1 Treatment litter mass NA  
## 14 2014-04-24 T11T2 Treatment litter mass NA  
## 15 2014-04-24 T11T3 Treatment litter mass NA  
## 16 2014-04-24 T12T1 Treatment litter mass NA  
## 17 2014-04-24 T12T2 Treatment litter mass NA  
## 18 2014-04-24 T12T3 Treatment litter mass NA  
## 19 2014-04-24 Blank 1 Both acidity 5.31000000  
## 20 2014-04-24 Blank 2 Both acidity 6.00000000  
## 21 2014-04-24 C10S1 Control acidity 5.24000000  
## 22 2014-04-24 C10S2 Control acidity 5.84000000  
## 23 2014-04-24 C10S3 Control acidity 7.04000000  
## 24 2014-04-24 C10T1 Control acidity 5.91000000  
## 25 2014-04-24 C10T2 Control acidity 5.79000000  
## 26 2014-04-24 C10T3 Control acidity 5.83000000  
## 27 2014-04-24 C11S1 Control acidity 4.97000000  
## 28 2014-04-24 C11S2 Control acidity 6.66000000  
## 29 2014-04-24 C11S3 Control acidity 5.35000000  
## 30 2014-04-24 C11S4 Control acidity 5.24000000  
## 31 2014-04-24 C11S5 Control acidity 5.59000000  
## 32 2014-04-24 C11S6 Control acidity 5.23000000  
## 33 2014-04-24 C11S7 Control acidity 5.46000000  
## 34 2014-04-24 C11T1 Control acidity 5.85000000  
## 35 2014-04-24 C11T2 Control acidity 5.83000000  
## 36 2014-04-24 C11T3 Control acidity 5.98000000  
## 37 2014-04-24 C12S1 Control acidity 5.13000000  
## 38 2014-04-24 C12S2 Control acidity 5.22000000  
## 39 2014-04-24 C12S3 Control acidity 6.02000000  
## 40 2014-04-24 C12T1 Control acidity 5.88000000  
## 41 2014-04-24 C12T2 Control acidity 5.81000000  
## 42 2014-04-24 C12T3 Control acidity 5.90000000  
## 43 2014-04-24 C20SW1 Control acidity 6.83000000  
## 44 2014-04-24 C21SW1 Control acidity 7.14000000  
## 45 2014-04-24 C30D1 Control acidity 2.16000000  
## 46 2014-04-24 C30D2 Control acidity 2.05000000  
## 47 2014-04-24 C31D1 Control acidity 2.04000000  
## 48 2014-04-24 T10S1 Treatment acidity 5.12000000  
## 49 2014-04-24 T10S2 Treatment acidity 5.53000000  
## 50 2014-04-24 T10S3 Treatment acidity 5.30000000  
## 51 2014-04-24 T10T1 Treatment acidity 5.75000000  
## 52 2014-04-24 T10T2 Treatment acidity 5.85000000  
## 53 2014-04-24 T10T3 Treatment acidity 5.83000000  
## 54 2014-04-24 T11S1 Treatment acidity 4.77000000  
## 55 2014-04-24 T11S2 Treatment acidity 5.22000000  
## 56 2014-04-24 T11S3 Treatment acidity 5.27000000  
## 57 2014-04-24 T11T1 Treatment acidity 5.88000000  
## 58 2014-04-24 T11T2 Treatment acidity 5.90000000  
## 59 2014-04-24 T11T3 Treatment acidity 5.75000000  
## 60 2014-04-24 T12S1 Treatment acidity 5.09000000  
## 61 2014-04-24 T12S2 Treatment acidity 7.04000000  
## 62 2014-04-24 T12S3 Treatment acidity 5.13000000  
## 63 2014-04-24 T12T1 Treatment acidity 6.86000000  
## 64 2014-04-24 T12T2 Treatment acidity 5.87000000  
## 65 2014-04-24 T12T3 Treatment acidity 5.87000000  
## 66 2014-04-24 T20SW1 Treatment acidity 7.04000000  
## 67 2014-04-24 T21SW1 Treatment acidity 6.72000000  
## 68 2014-04-24 C20SW1 Control POC conc 0.06105263  
## 69 2014-04-24 C21SW1 Control POC conc -0.13345242  
## 70 2014-04-24 T20SW1 Treatment POC conc 0.28307414  
## 71 2014-04-24 T21SW1 Treatment POC conc -1.20884211  
## 72 2014-04-24 Blank 1 Both NO3.N 0.03793548  
## 73 2014-04-24 Blank 2 Both NO3.N 0.02416129  
## 74 2014-04-24 C10S1 Control NO3.N 0.25053226  
## 75 2014-04-24 C10S2 Control NO3.N 0.03646774  
## 76 2014-04-24 C10S3 Control NO3.N 0.07079032  
## 77 2014-04-24 C10T1 Control NO3.N 1.86595161  
## 78 2014-04-24 C10T2 Control NO3.N 1.99759677  
## 79 2014-04-24 C10T3 Control NO3.N 2.09356452  
## 80 2014-04-24 C11S1 Control NO3.N 0.02540323  
## 81 2014-04-24 C11S2 Control NO3.N 0.56530645  
## 82 2014-04-24 C11S3 Control NO3.N 0.45240323  
## 83 2014-04-24 C11S4 Control NO3.N 0.08546774  
## 84 2014-04-24 C11S5 Control NO3.N 0.54814516  
## 85 2014-04-24 C11S6 Control NO3.N 1.21811290  
## 86 2014-04-24 C11S7 Control NO3.N 0.14350000  
## 87 2014-04-24 C11T1 Control NO3.N 1.80317742  
## 88 2014-04-24 C11T2 Control NO3.N 1.77156452  
## 89 2014-04-24 C11T3 Control NO3.N 1.46808065  
## 90 2014-04-24 C12S1 Control NO3.N 1.77382258  
## 91 2014-04-24 C12S2 Control NO3.N 0.22998387  
## 92 2014-04-24 C12S3 Control NO3.N 1.55772581  
## 93 2014-04-24 C12T1 Control NO3.N 1.34862903  
## 94 2014-04-24 C12T2 Control NO3.N 2.07279032  
## 95 2014-04-24 C12T3 Control NO3.N 1.97659677  
## 96 2014-04-24 C20SW1 Control NO3.N 0.01975806  
## 97 2014-04-24 C21SW1 Control NO3.N 0.13469355  
## 98 2014-04-24 C30D1 Control NO3.N 1.35269355  
## 99 2014-04-24 C30D2 Control NO3.N 3.18985484  
## 100 2014-04-24 C31D1 Control NO3.N 1.54824194  
## 101 2014-04-24 T10S1 Treatment NO3.N 0.09269355  
## 102 2014-04-24 T10S2 Treatment NO3.N 0.24443548  
## 103 2014-04-24 T10S3 Treatment NO3.N 0.62627419  
## 104 2014-04-24 T10T1 Treatment NO3.N 1.62885484  
## 105 2014-04-24 T10T2 Treatment NO3.N 1.62275806  
## 106 2014-04-24 T10T3 Treatment NO3.N 1.75937097  
## 107 2014-04-24 T11S1 Treatment NO3.N 0.39956452  
## 108 2014-04-24 T11S2 Treatment NO3.N 0.69175806  
## 109 2014-04-24 T11S3 Treatment NO3.N 0.05385484  
## 110 2014-04-24 T11T1 Treatment NO3.N 1.75327419  
## 111 2014-04-24 T11T2 Treatment NO3.N 1.62095161  
## 112 2014-04-24 T11T3 Treatment NO3.N 1.62704839  
## 113 2014-04-24 T12S1 Treatment NO3.N 0.18527419  
## 114 2014-04-24 T12S2 Treatment NO3.N 0.04188710  
## 115 2014-04-24 T12S3 Treatment NO3.N 0.07575806  
## 116 2014-04-24 T12T1 Treatment NO3.N 2.04862903  
## 117 2014-04-24 T12T2 Treatment NO3.N 1.64488710  
## 118 2014-04-24 T12T3 Treatment NO3.N 1.98630645  
## 119 2014-04-24 T20SW1 Treatment NO3.N 0.08795161  
## 120 2014-04-24 T21SW1 Treatment NO3.N 0.06017742  
## 121 2014-04-24 Blank 1 Both NH4.N 0.02100000  
## 122 2014-04-24 Blank 2 Both NH4.N 0.02022222  
## 123 2014-04-24 C10S1 Control NH4.N 0.12405556  
## 124 2014-04-24 C10S2 Control NH4.N 0.64438889  
## 125 2014-04-24 C10S3 Control NH4.N 0.95783333  
## 126 2014-04-24 C10T1 Control NH4.N 1.20283333  
## 127 2014-04-24 C10T2 Control NH4.N 1.12272222  
## 128 2014-04-24 C10T3 Control NH4.N 1.25805556  
## 129 2014-04-24 C11S1 Control NH4.N 0.33483333  
## 130 2014-04-24 C11S2 Control NH4.N 1.42761111  
## 131 2014-04-24 C11S3 Control NH4.N 0.13416667  
## 132 2014-04-24 C11S4 Control NH4.N 0.33327778  
## 133 2014-04-24 C11S5 Control NH4.N 0.49038889  
## 134 2014-04-24 C11S6 Control NH4.N 0.22361111  
## 135 2014-04-24 C11S7 Control NH4.N 0.54405556  
## 136 2014-04-24 C11T1 Control NH4.N 1.01461111  
## 137 2014-04-24 C11T2 Control NH4.N 1.14527778  
## 138 2014-04-24 C11T3 Control NH4.N 0.84816667  
## 139 2014-04-24 C12S1 Control NH4.N 0.14505556  
## 140 2014-04-24 C12S2 Control NH4.N 0.09216667  
## 141 2014-04-24 C12S3 Control NH4.N 0.22438889  
## 142 2014-04-24 C12T1 Control NH4.N 0.77427778  
## 143 2014-04-24 C12T2 Control NH4.N 1.02472222  
## 144 2014-04-24 C12T3 Control NH4.N 0.97727778  
## 145 2014-04-24 C20SW1 Control NH4.N 0.00000000  
## 146 2014-04-24 C21SW1 Control NH4.N 0.01050000  
## 147 2014-04-24 C30D1 Control NH4.N 0.64672222  
## 148 2014-04-24 C30D2 Control NH4.N 1.75272222  
## 149 2014-04-24 C31D1 Control NH4.N 0.33172222  
## 150 2014-04-24 T10S1 Treatment NH4.N 0.43050000  
## 151 2014-04-24 T10S2 Treatment NH4.N 0.08750000  
## 152 2014-04-24 T10S3 Treatment NH4.N 0.15905556  
## 153 2014-04-24 T10T1 Treatment NH4.N 0.85050000  
## 154 2014-04-24 T10T2 Treatment NH4.N 0.78361111  
## 155 2014-04-24 T10T3 Treatment NH4.N 0.72372222  
## 156 2014-04-24 T11S1 Treatment NH4.N 0.04083333  
## 157 2014-04-24 T11S2 Treatment NH4.N 0.19794444  
## 158 2014-04-24 T11S3 Treatment NH4.N 0.19405556  
## 159 2014-04-24 T11T1 Treatment NH4.N 0.85438889  
## 160 2014-04-24 T11T2 Treatment NH4.N 0.66927778  
## 161 2014-04-24 T11T3 Treatment NH4.N 0.90416667  
## 162 2014-04-24 T12S1 Treatment NH4.N 0.16450000  
## 163 2014-04-24 T12S2 Treatment NH4.N 1.11494444  
## 164 2014-04-24 T12S3 Treatment NH4.N 0.50127778  
## 165 2014-04-24 T12T1 Treatment NH4.N 6.70716667  
## 166 2014-04-24 T12T2 Treatment NH4.N 0.86605556  
## 167 2014-04-24 T12T3 Treatment NH4.N 1.14294444  
## 168 2014-04-24 T20SW1 Treatment NH4.N 0.00000000  
## 169 2014-04-24 T21SW1 Treatment NH4.N 0.00000000

# nascondi lo script, presenta i dati. cioe' tutti i dati di una singola data.