```r
setwd("E:/S2Slope_grassland")
wuyispec <- read.table("E:/S2Slope_grassland/asd08GNP.txt", header=T,sep="\t",quote="")
names(wuyispec)
results<-
data.frame(site="site",R_seg="R_seg",NIR_seg="NIR_seg",G_Rslope="G_Rslope",rededge_slo
pe="rededge_slope",NIR_slope="NIR_slope",NDVIhyper="NDVIhyper",Rmin="Rmin",NDVIt=
"NDVIt")
print(ncol(wuyispec))
wavelength <- wuyispec[,1]
for (i in 2:ncol(wuyispec)){
        site <- wuyispec[,i]
        col_data <- cbind(wavelength,site)
        col_data <- as.data.frame(col_data)
        asd.seg<-segmented(glm(site~wavelength,data  =  col_data),  seg.z=~wavelength,
psi=c(0.67,0.76))
        data_1<-subset(col_data,wavelength<asd.seg$psi[3])
        data_2<-subset(col_data,wavelength>asd.seg$psi[3]& wavelength<asd.seg$psi[4])
        data_3<-subset(col_data,wavelength>asd.seg$psi[4])
        mod1<-lm(site~wavelength,data=data_1)
        mod2<-lm(site~wavelength,data=data_2)
        mod3<-lm(site~wavelength,data=data_3)
        R1 = subset(col_data,wavelength==0.67)[,2]
        NIR = subset(col_data,wavelength==0.8)[,2]
        NDVIhyper1 = (NIR-R1)/(NIR+R1)
        R_data<-subset(col_data,wavelength >= 0.60 & wavelength < asd.seg$psi[3])
        R = min(R_data[,2])
        Rw= subset(col_data,site==R)[,1]
        NDVIt1 = (NIR-R)/(NIR+R)
        G_Rslope=mod1$coefficients[2]
        G_Rslope<-as.data.frame(G_Rslope)
        rededge_slope=mod2$coefficients[2]
        rededge_slope<-as.data.frame(rededge_slope)
        NIR_slope=mod3$coefficients[2]
        NIR_slope<-as.data.frame(NIR_slope)
        newline                <-                data.frame(t(c(site                =
names(wuyispec[i]),R_seg=asd.seg$psi[3],NIR_seg=asd.seg$psi[4],G_Rslope=G_Rslope[1,1],r
ededge_slope=rededge_slope[1,1],NIR_slope=NIR_slope[1,1],NDVIhyper=NDVIhyper1,Rmin
=Rw,NDVIt=NDVIt1)))
        results <- rbind(results, newline)
        print(i)
    }
write.table(results, file = "results.csv", row.names = FALSE, append = FALSE, col.names =
FALSE, sep = ", ")
```