

APTS - Survival Analysis

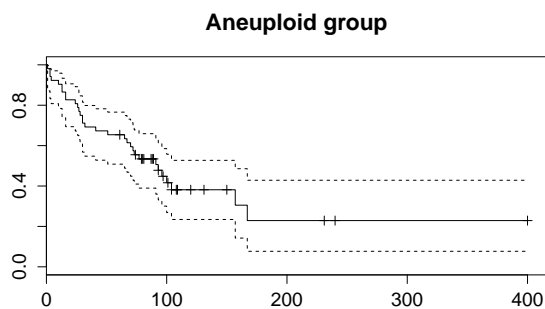
Lab Session 1 - Solutions

Ingrid Van Keilegom

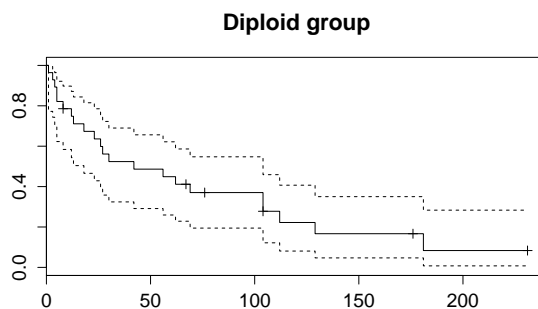
September 1, 2015

```
1. > install.packages("survival")
> library("survival")
> install.packages("KMsurv")
> library("KMsurv")
> data(tongue)
> tongue

> ane=subset(tongue,type==1)
> fit_ane=survfit(Surv(time,delta)~1,data=ane,conf.type="log-log")
> plot(fit_ane)
> title(main="Aneuploid group")
```



```
> dip=subset(tongue,type==2)
> fit_dip=survfit(Surv(time,delta)~1,data=dip,conf.type="log-log")
> plot(fit_dip)
> title(main="Diploid group")
```



```
> fit_ane
Call: survfit(formula = Surv(time, delta) ~ 1, data = ane, conf.type = "log-log")
```

| n | events | median | 0.95LCL | 0.95UCL |
|----|--------|--------|---------|---------|
| 52 | 31 | 93 | 65 | 157 |

```
> fit_dip
Call: survfit(formula = Surv(time, delta) ~ 1, data = dip, conf.type = "log-log")
```

| n | events | median | 0.95LCL | 0.95UCL |
|----|--------|--------|---------|---------|
| 28 | 22 | 42 | 18 | 104 |

```
2. > data(burn)
```

```
> burn
```

```
> survdiff(Surv(T3,D3)~Z1,data=burn)
```

```
Call:
```

```
survdiff(formula = Surv(T3, D3) ~ Z1, data = burn)
```

| | N | Observed | Expected | (O-E) ² /E | (O-E) ² /V |
|------|----|----------|----------|-----------------------|-----------------------|
| Z1=0 | 70 | 28 | 21.4 | 2.07 | 3.79 |
| Z1=1 | 84 | 20 | 26.6 | 1.66 | 3.79 |

```
Chisq= 3.8 on 1 degrees of freedom, p= 0.0515
```

```
> attach(burn)
```

```
> burn$area[Z4<=29] = 1
```

```
> burn$area[Z4>=30 & Z4<=50] = 2
```

```
> burn$area[Z4>=51] = 3
```

```
> survdiff(Surv(T3,D3)~Z1+strata(area),data=burn)
```

```
Call:
```

```
survdiff(formula = Surv(T3, D3) ~ Z1 + strata(area), data = burn)
```

| | N | Observed | Expected | (O-E) ² /E | (O-E) ² /V |
|------|----|----------|----------|-----------------------|-----------------------|
| Z1=0 | 70 | 28 | 21.6 | 1.87 | 3.61 |
| Z1=1 | 84 | 20 | 26.4 | 1.53 | 3.61 |

```
Chisq= 3.6 on 1 degrees of freedom, p= 0.0574
```