```
> restart:
> a:=0.01*10^12: l:=161.5: d:=0.356: k:=35200:
s:=evalf((k/(4*a))^(1/4));
```

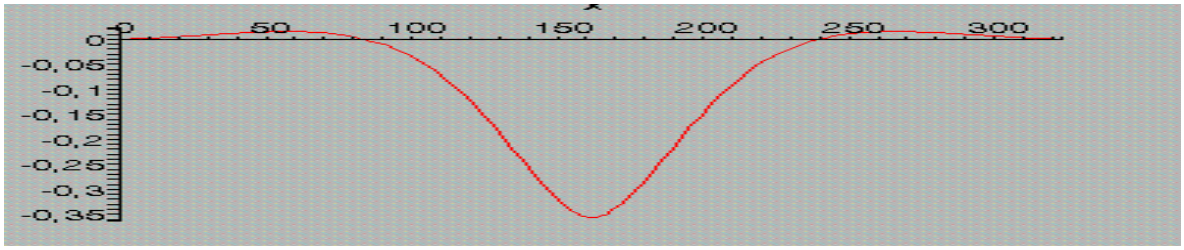
$$s := 0.03062814313$$

```
> y:=x->B*sin(s*x)*cosh(s*x)+C*cos(s*x)*sinh(s*x):
assign(solve({y(l)=-d,D(y)(l)=0},{B,C})): evalf(B): evalf(C):
> evalf(a*D(D(D(y)))(l));
```

$$4.090844950\ 10^{5}$$

```
> evalf(a*D(D(D(y)))(0));
```

$$1349.080306$$




```
> restart:
> a:=0.05*10^12: l:=161.5: d:=0.356: k:=20200:
s:=evalf((k/(4*a))^(1/4));
```

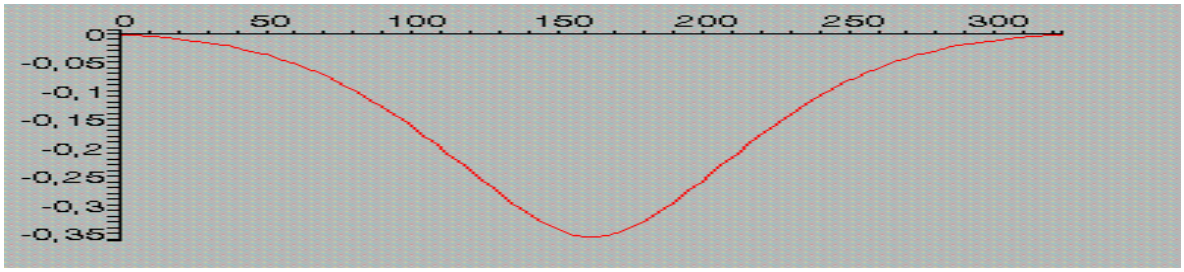
$$s := 0.01782708534$$

```
> y:=x->B*sin(s*x)*cosh(s*x)+C*cos(s*x)*sinh(s*x):
assign(solve({y(l)=-d,D(y)(l)=0},{B,C})): evalf(B): evalf(C):
> evalf(a*D(D(D(y)))(l));
```

$$4.043185287\ 10^{5}$$

```
> evalf(a*D(D(D(y)))(0));
```

$$-43776.98512$$



```
> restart:
> a:=0.1*10^12: l:=161.5: d:=0.356: k:=17200:
s:=evalf((k/(4*a))^(1/4));
```

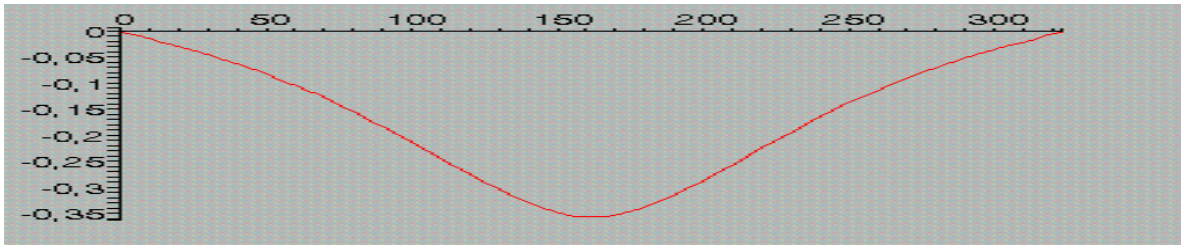
$$s := 0.01440015325$$

```
> y:=x->B*sin(s*x)*cosh(s*x)+C*cos(s*x)*sinh(s*x):
assign(solve({y(l)=-d,D(y)(l)=0},{B,C})): evalf(B): evalf(C):
> evalf(a*D(D(D(y)))(l));
```

$$4.168515562\ 10^{5}$$

```
> evalf(a*D(D(D(y)))(0));
```

$$-56415.04365$$




```
> restart:
> a:=0.2*10^12: l:=161.5: d:=0.356: k:=13800:
s:=evalf((k/(4*a))^(1/4));
```

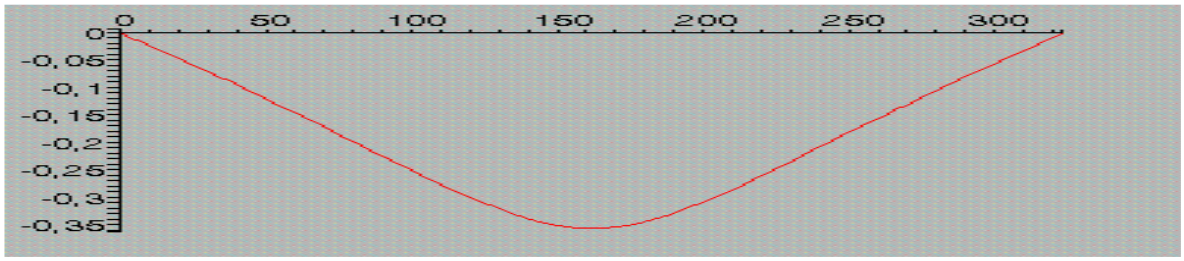
$$s := 0.01146033400$$

```
> y:=x->B*sin(s*x)*cosh(s*x)+C*cos(s*x)*sinh(s*x):
assign(solve({y(l)=-d,D(y)(l)=0},{B,C})): evalf(B): evalf(C):
> evalf(a*D(D(D(y)))(l));
```

$$4.007463816\ 10^{5}$$

```
> evalf(a*D(D(D(y)))(0));
```

$$-37195.89028$$



```
> restart:
> a:=0.4*10^12: l:=161.5: d:=0.356: k:=11300:
s:=evalf((k/(4*a))^(1/4));
```

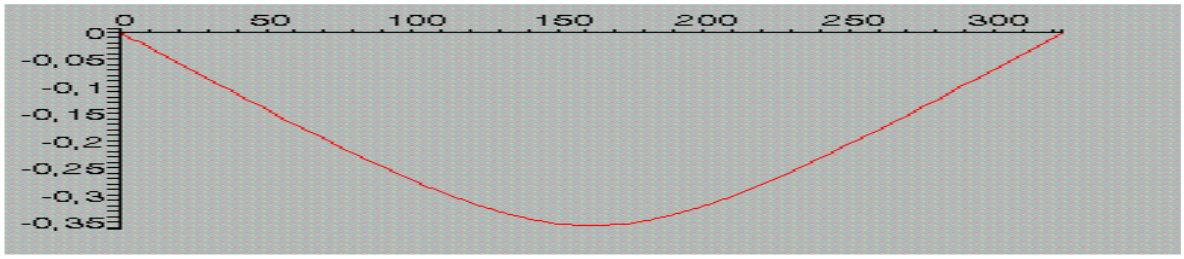
$$s := 0.009167261400$$

```
> y:=x->B*sin(s*x)*cosh(s*x)+C*cos(s*x)*sinh(s*x):
assign(solve({y(l)=-d,D(y)(l)=0},{B,C})): evalf(B): evalf(C):
> evalf(a*D(D(D(y)))(l));
```

$$4.038969652\ 10^{5}$$

```
> evalf(a*D(D(D(y)))(0));
```

$$19347.12440$$




```
> restart:
> a:=0.8*10^12: l:=161.5: d:=0.356: k:=7300:
s:=evalf((k/(4*a))^(1/4));
```

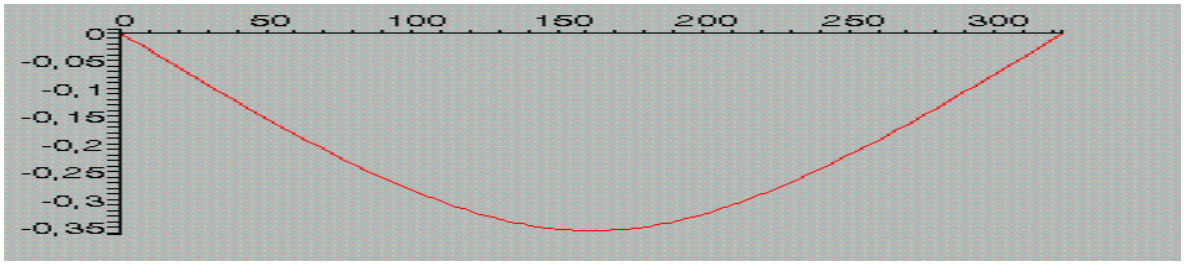
$$s := 0.006911037038$$

```
> y:=x->B*sin(s*x)*cosh(s*x)+C*cos(s*x)*sinh(s*x):
assign(solve({y(l)=-d,D(y)(l)=0},{B,C})): evalf(B): evalf(C):
> evalf(a*D(D(D(y)))(l));
```

$$4.038221513\ 10^{5}$$

```
> evalf(a*D(D(D(y)))(0));
```

$$1.462297261\ 10^{5}$$



```
> restart:
> a:=1.2*10^12: l:=161.5: d:=0.356: k:=4000:
s:=evalf((k/(4*a))^(1/4));
```

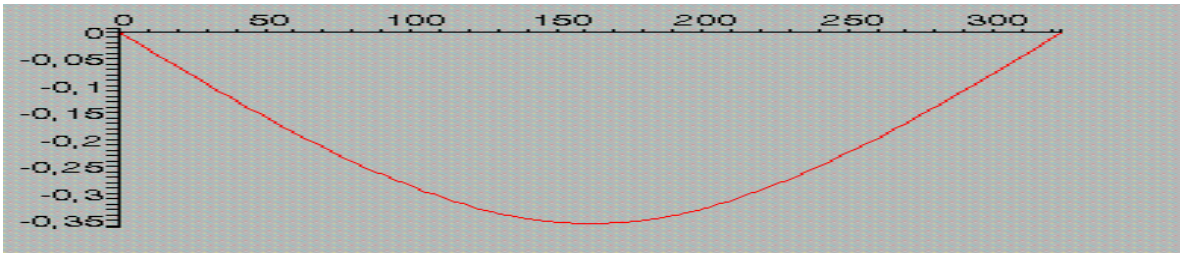
$$s := 0.005372849659$$

```
> y:=x->B*sin(s*x)*cosh(s*x)+C*cos(s*x)*sinh(s*x):
assign(solve({y(l)=-d,D(y)(l)=0},{B,C})): evalf(B): evalf(C):
> evalf(a*D(D(D(y)))(l));
```

$$4.153719490\ 10^{5}$$

```
> evalf(a*D(D(D(y)))(0));
```

$$2.725979027\ 10^{5}$$




```
> restart:
> a:=1.6*10^12: l:=161.5: d:=0.356: k:=100:
s:=evalf((k/(4*a))^(1/4));
```

$$s := 0.001988176822$$

```
> y:=x->B*sin(s*x)*cosh(s*x)+C*cos(s*x)*sinh(s*x);
assign(solve({y(l)=-d,D(y)(l)=0},{B,C})); evalf(B); evalf(C);
> evalf(a*D(D(D(y)))(l));
```

$$4.084630046\ 10^{5}$$

```
> evalf(a*D(D(D(y)))(0));
```

$$4.048700842\ 10^{5}$$