GMOR error propagation

m - fermion mass / Σ - chiral condensate / M - pion mass

$$F_\pi = \frac{\sqrt{2m\Sigma}}{M}$$

In [1]:
```
var('m', 'Σ', 'M')
```

Out[1]: (m, Σ, M)

In [2]:
```
Fpi = sqrt(2 * m * Σ) / M
```

In [3]:
```
derivative(Fpi, Σ)^2
```

Out[3]: 1/2*m/(M^2*Σ)

In [4]:
```
show(_)
```

$$\frac{m}{2\,M^2\Sigma}$$

In [5]:
```
derivative(Fpi, M)^2
```

Out[5]: 2*m*Σ/M^4

In [6]:
```
show(_)
```

$$\frac{2\,m\Sigma}{M^4}$$

$$\sigma_F = \sqrt{\frac{m}{2\Sigma M^2}\sigma_\Sigma^2 + \frac{2m\Sigma}{M^4}\sigma_M^2} = \frac{1}{M}\sqrt{\frac{m}{2\Sigma}\sigma_\Sigma^2 + \frac{2m\Sigma}{M^2}\sigma_M^2}$$

Hip, 2022-04-20