

ADC characterization Miko

overall features of $\Delta\Sigma$ -ADCs

- input signal sampled at comparatively high frequency (modulator frequency)
- filtered and decimated (down sampled) for output signal
- ratio between modulator and output frequency is *oversampling ratio*
- increasing OSR reduces output noise and output data rate, because more samples are averaged

Description of ADS1115

- comprises internal voltage reference, clock oscillator and i2c interface
- switched capacitor $\Delta\Sigma$ -ADC followed by digital filter
- good attenuation of common mode signals
- input signals are compared to internal voltage reference
- differential and single ended mode possible, PGA as differential amp
- when in single ended, comparison against ground on negative input of ADC
- single shot and continuous mode
- internal buffer register stores most recent sampled signal independent of op mode
- data