1 Working Principles

Chip-Scale Atomic Clocks (CSACs) can be divided into two main categories based on the atomic element they use and the operating principle they follow. In this section, we will explore and highlight the key components and contrasting approaches of these two families of CSACs, namely:

- Microwave Optical Double-Resonance (MODR), based on Rubidium (Rb)
- Coherent Population Trapping (CPT), based on Cesium (Cs)

As we will see, the two technologies have analogous structures, but they differ in the physics package, which is the core of the clock.

1.1 Control Loop (CL)

1.2 Local Oscillator (LO)