**Single Point Incremental Forming (SPIF)**

**Principle of SPIF**

Single Point Incremental Forming (SPIF) is a recently developed dieless sheet metal part production technique that is gradually evolving towards industrial applicability. In this process a sheet metal part is formed in a stepwise fashion by a CNC controlled rotating spherical tool without the need for a supporting (partial) die. This technique allows a relatively fast and cheap production of small series of sheet metal parts.

- Sheet metal deformed by a small tool
- Tool guided by a CNC machine
- Dieless, with high sheet formability
- For rapid prototypes, small batch productions

**Industrial applications**

**SPIF FE Simulation**

- Pyramid test

\[ \text{FE considered mesh for simulation of pyramid test} \]

**Bimetallic Rolling Casting**

**Advantages**

- High wear resistance in the shell
- High toughness in the core

Since 1970, Marichal Ketin uses the vertical spin casting process to rolling mills manufacturing. Modeling can explain crack events.

**FE Simulation**

- Axial stress and phase amount evolution during Post Casting Cooling (PCC) stage

**Laser Cladding (LC) – a method to deposit a metal powder**

**Process**

- Laser cladding is a process that bonds similar or dissimilar metals. It is a unique form of welding that uses a laser as a heat flux and a metal powder stream to add material