**SPATIAL AUDIO AUTHORING FOR AMBISONICS REPRODUCTION**

The basic idea is to approximate the acoustic field at a given point(listener position) with a finite umber of spherical harmonics.

Spherical harmonics>> Elemenarty solutions of the wave equation in spherical coordinates. Divergent convergert field leri açıklayabiliyor.

Kaynak iki üçte enviromentler var. 6 7 de toollar var .

Plug ins allow caltulate low order ambisonic signals.

1. **Fieldrepresentation(FR):**Representationofanacous- tic field in spherical harmonics up to a given order.
2. **Source representation (SR):** Representation of an acoustic source in spherical harmonics up to a given order.
3. **Multichannel representation** (MR): Signals used to play back via loudspeakers. This includes standard loudspeaker set-ups like stereo or 5.1 as well as rep-

resentations using a high number of channels.

1. **Scene Representation:** Representation of a acoustic scene consisting of the raw audio signals for each sound source and corresponding meta data describing the spatial layout and source properties

If the plane wave assumption holds for the loudspeaker sig- nals at the listening position, each speaker will reproduce a signal according to (2) at the listening position in the origin of the coordinate system. The difference is that the speakers are not in angle φ but in angle θn, where N is the number of speaker [8]. The pressure Pn(ω) of the n-th speaker be- comes