symbol, $c_{m,n}$ the block denoted by $C \rightarrow R$ provides two real data that correspond to the real and imaginary parts of the complex data. The real data, $a_{m,n}$, are modulated by an OFDM/OQAM modulator before transmission. Fig. 4 does not include potential additional processing which is specific to each channel estimation method. In CP-OFDM, if a pilot $p_{m_0,n_0}$ is transmitted at a complex position $(m_0, n_0)$, the received signal at this position is:

$$y^{(c)}_{m_0,n_0} = H^{(c)}_{m_0,n_0}(p_{m_0,n_0}) + \eta_{m_0,n_0}. \quad (11)$$

Thus the channel is easily estimated. Having the same estimation process in OFDM/OQAM implies performing some processing at the transmitter side. The purpose of the processing is to cancel $a^{(i)}_{m_0,n_0}$ at the receiver side. Let us call these processing methods as Imaginary Interference Cancelation.

III. Imaginary Interference Cancelation

A. Imaginary Interference Cancelation: principle

Imaginary Interference Cancelation purpose is to perform some processing at the transmitter in order to cancel $a^{(i)}_{m_0,n_0}$ at the receiver side. In order to simplify the description of these methods, we assume that the imaginary interference can be approximated only using the data that are located just around the pilot position, i.e.,

$$a^{(i)}_{m_0,n_0} \approx \sum_{(p,q)\in \Omega_{1,1}} a_{m_0+p,n_0+q} (g)_{m_0+p,n_0+q}. \quad (12)$$

However, for the CE methods we propose the principles can be extended to bigger neighborhood. To simplify the notations we use a single integer, $k$, to index the positions around