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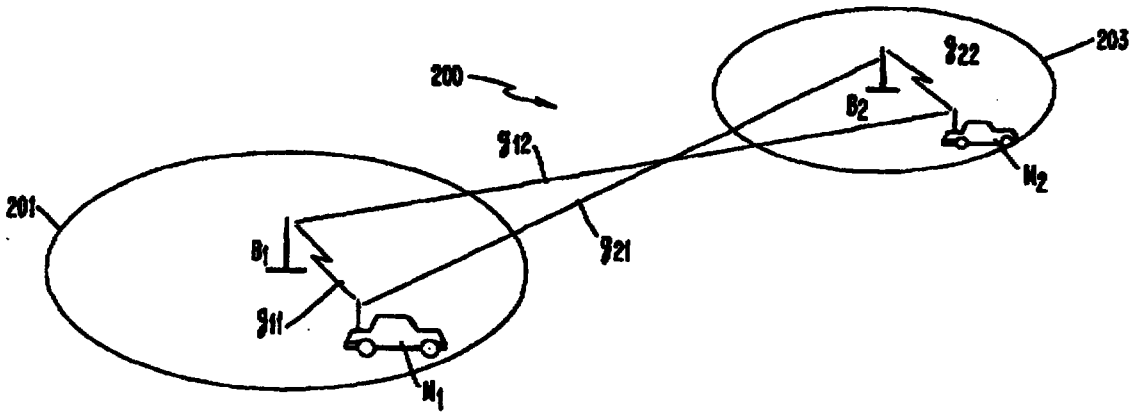
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(54) Title: METHOD AND APPARATUS FOR ADAPTIVE CHANNEL ALLOCATION WITH POWER CONTROL IN A MOBILE COMMUNICATIONS SYSTEM



(57) Abstract

In a cellular communication system, a method and apparatus are provided for allocating a channel for use on a connection between a base station and a mobile station in a cell, without making measurements of downlink interference. Throughout the system, uplink and downlink power levels are regulated so that, within each cell, their sum changes by an amount whose magnitude is substantially equal to the magnitude of change in path gain between the mobile station and the base station in that cell, and which sum is opposite in sign to the amount of change in path gain. This power regulation scheme assures that there will be a strong correlation between system-wide measurements of uplink and downlink interferen ce. Therefore, with the power regulation scheme in place, each cell determines uplink carrier to interference (C/I) ratios for the free channels available for use in the cell and selects an acceptable free channel having a C/I value that is within a predetermined acceptable range. If uplink C/I on the acceptable free channel is greater than the uplink C/I value of a channel currently assigned to a connection, then an intra-cell handover is performed so that the connection will be reassigned to the acceptable free channel. This technique is useful for providing an adaptive channel allocation scheme to systems, such as analog cellular communications systems, in which downlink interference measurements cannot be made.