Telecommunication Standardization Sector
Study Group 15
Experts Group for ATM Video Coding
(Rapporteur's Group on Part of Q.2/15)

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
ORGANISATION INTERNATIONALE DE NORMALISATION
ISO/IEC JTC1/SC29/WG11
CODING OF MOVING PICTURES AND ASSOCIATED AUDIO

ISO/IEC JTC1/SC29/WG11
MPEG93/493
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On behalf of VADIS

**Title :** Performances of the MP@ML (distributive and interactive services)

**Purpose :** Information

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## 1. Introduction

The goal of this experiment is to check the performances in terms of coding efficiency of the MPEG-2 Main Profile - Main Level as it has been defined at the Sydney meeting. Both distributive and interactive services are taken into consideration.

## 2. Description of the experiment

Two "home made" new sequences have been used for this experiment. The original has been produced in PAL by a Belgian Broadcasting Organization (RTBF). The PAL-decoding process and the recording on a D1 tape were carried out in the RTBF studios without suffering from major degradations. This reflects a typical situation where MPEG-2 will be used in the very next future : the production is made in an analogical way and the transport in a digital way.

To be able to allocate a mean bit rate to a "pre-determined" picture quality, the sequences were processed in the Variable Bit Rate (VBR) mode. This "pre-determined" picture quality is assumed to be higher than the actual transmitted PAL quality. The global quantizer stepsize is fixed for the whole sequence, however it is locally tuned by using the step 3 of the TM5 rate control.

The first sequence is a **videoconference** like sequence (interactive services). It is composed of some news, interviews, weather forecast program, political debate and so on. The following processing parameters were used :

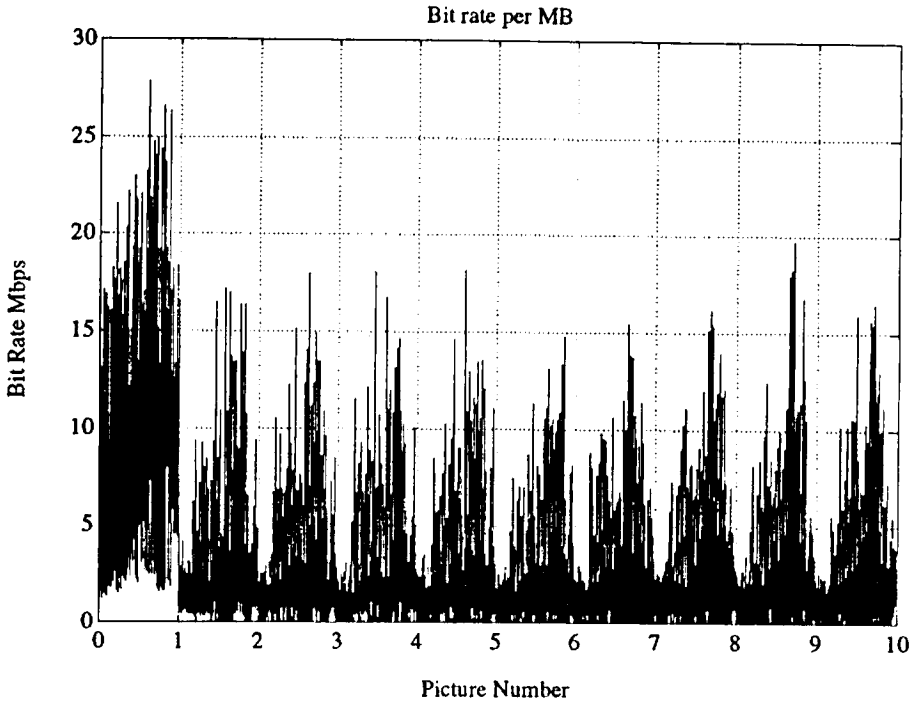
## 4. Figures

The following figures show some statistics about pictures, slices and macroblocks.

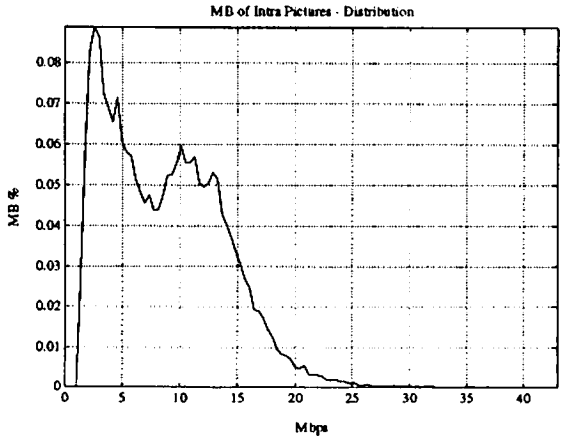
| Temporal evolution | Videoconference | TV programs |
|---|---|---|
| Macroblocks | F1 | F8 |
| Slices | F4 | F9 |
| Pictures | F6 | F16 |

| Bit Rate Distribution | Videoconference | | TV programs | | |
|---|---|---|---|---|---|
| | I | P | I | P | B |
| Macroblocks | F2 | F3 | F10 | F12 | F14 |
| Slices | F5 | F6 | F11 | F13 | F15 |
| Pictures | F7 | | F17 | | |

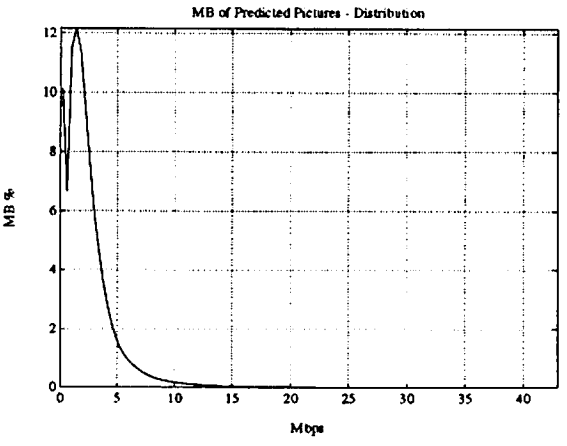
## 4.1 Videoconference



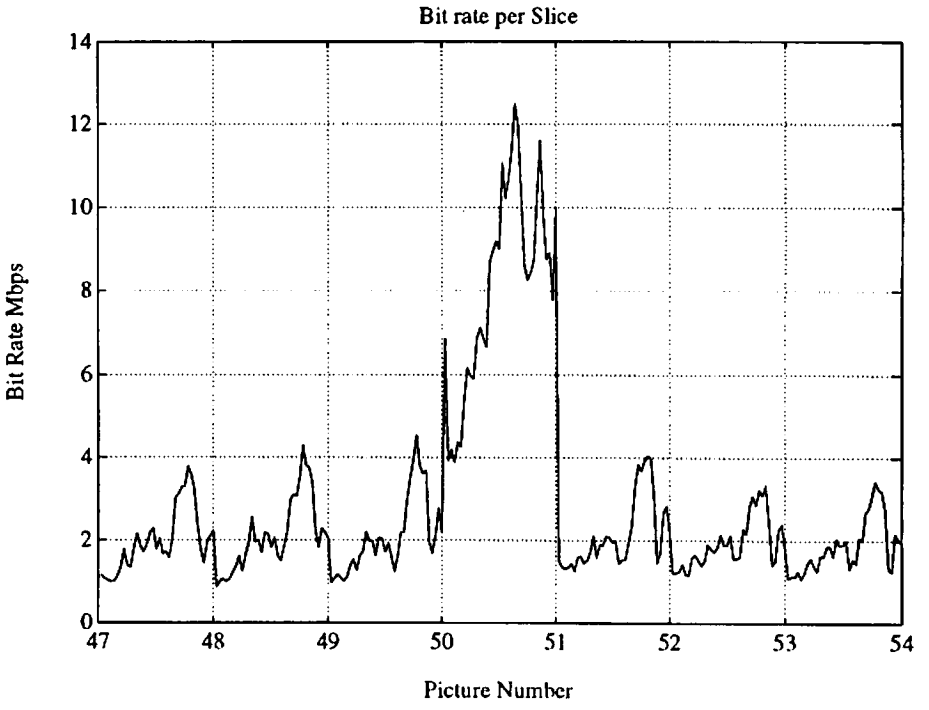

F1 : Temporal evolution ***MB Level - Videoconference***



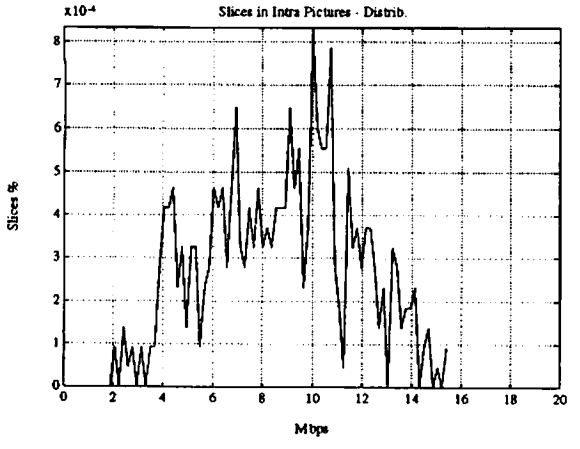

F2 : BR distribution - I plct ***MB Level - Videoconference***



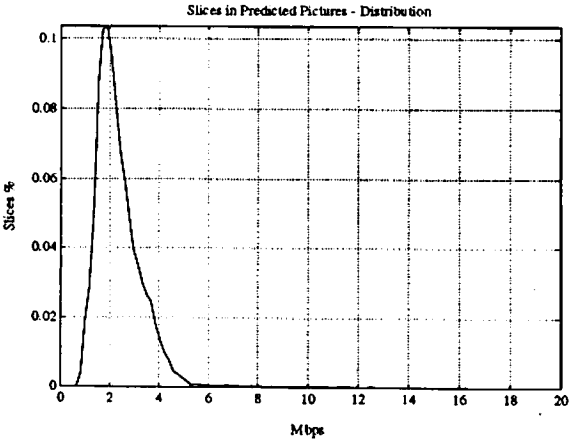

F3 : BR distribution - P plct ***MB Level - Videoconference***



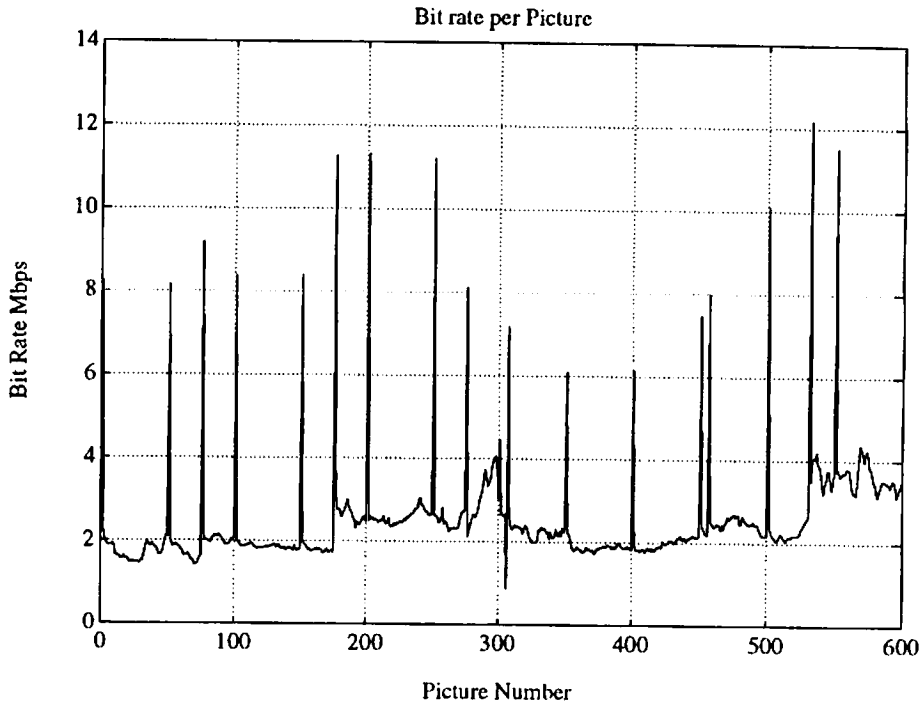

F4 : Temporal evolution ***Slice Level - Videoconference***



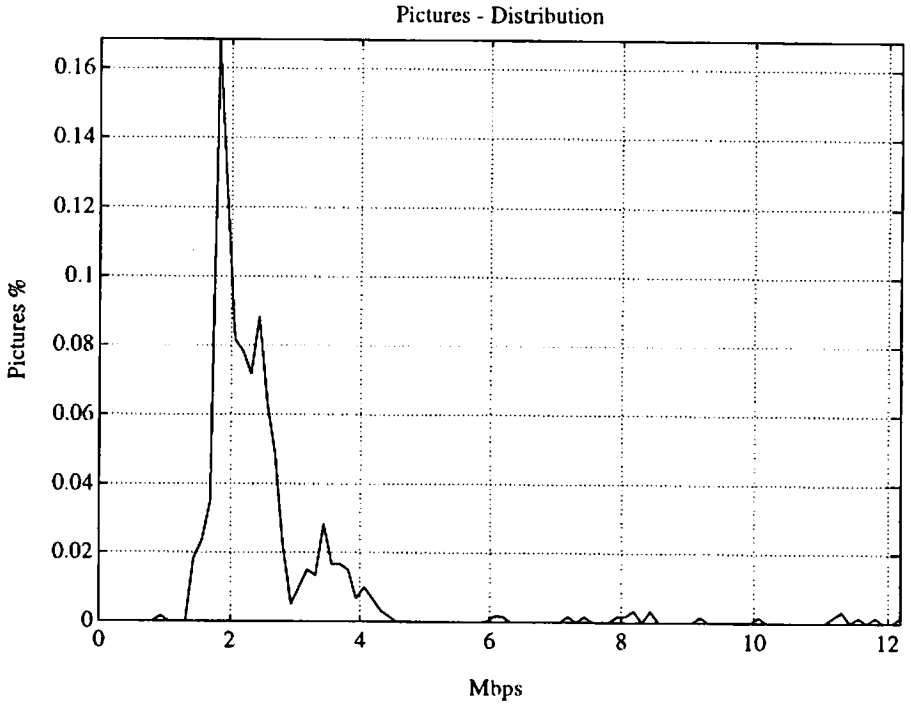

F5 : BR distribution - I pict ***Slice Level - Videoconference***




F6 : BR distribution - P pict ***Slice Level - Videoconference***

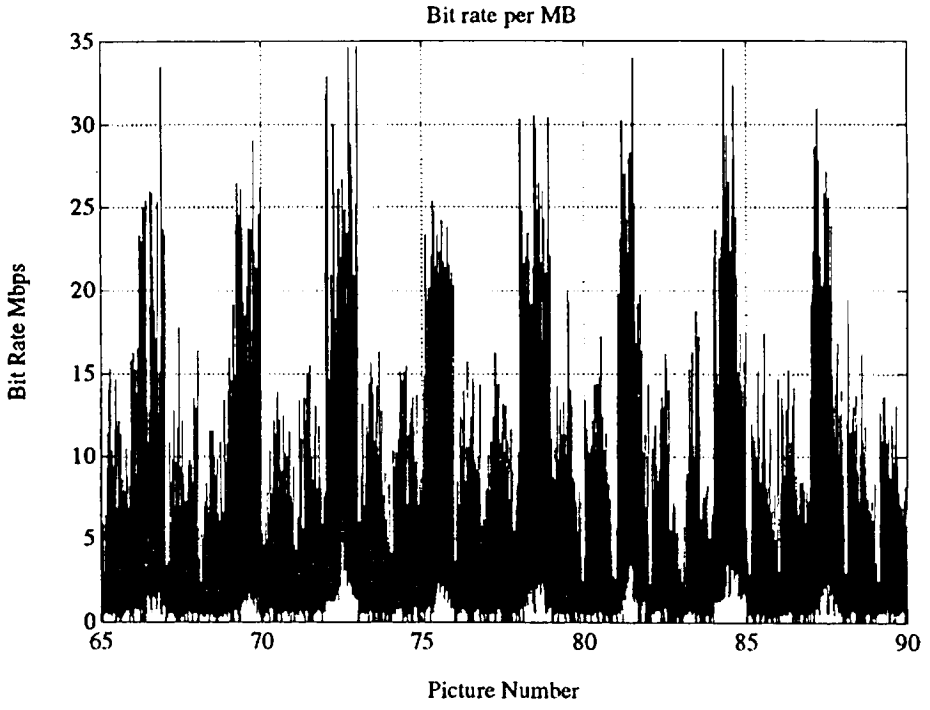



F6 : Temporal evolution ***Picture Level - Videoconference***

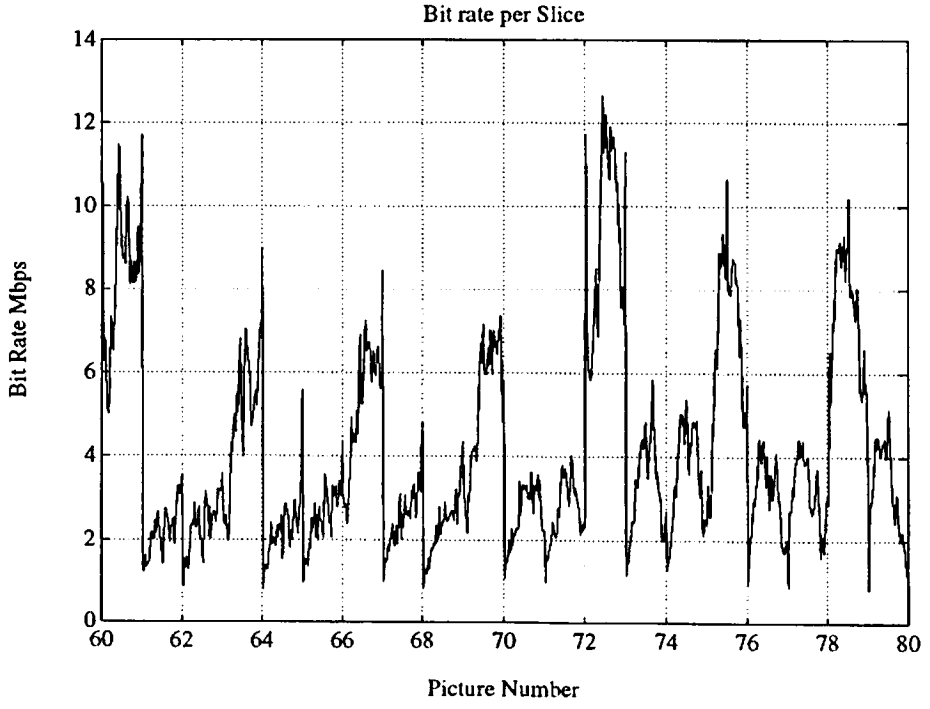



F7 : BR Distribution- I and P pict ***Picture Level - Videoconference***

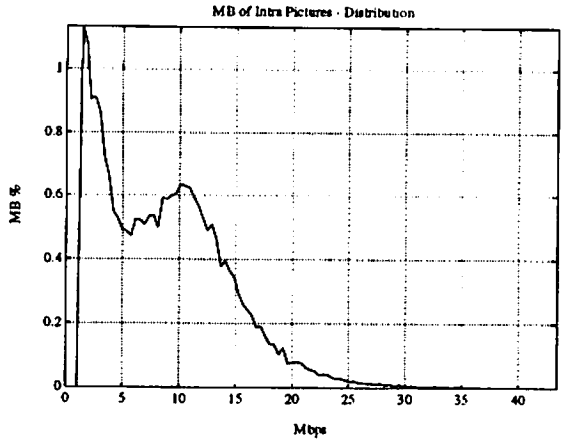
## 4.2 TV programs



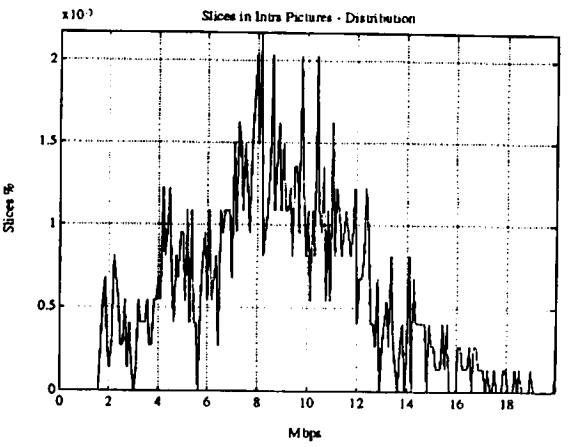

F8 : Temporal evolution ***MB Level - TV programs***



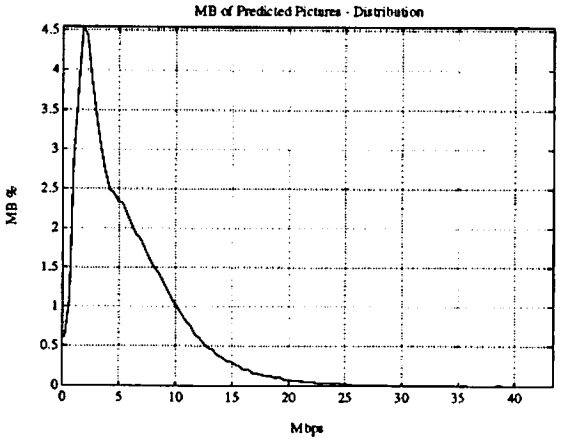

F9 : Temporal evolution ***Slice Level - TV programs***



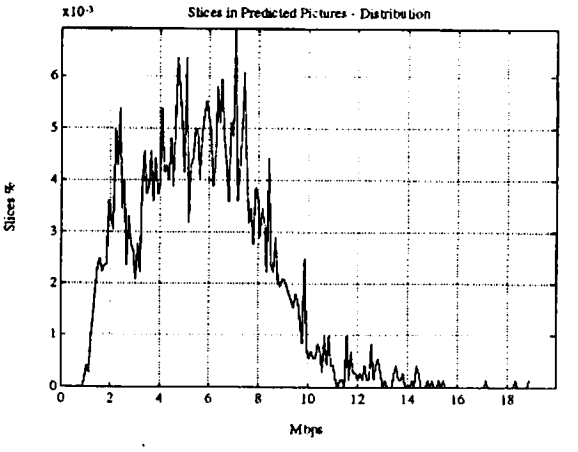

F10 : BR distribution - I pict ***MB Level - TV programs***



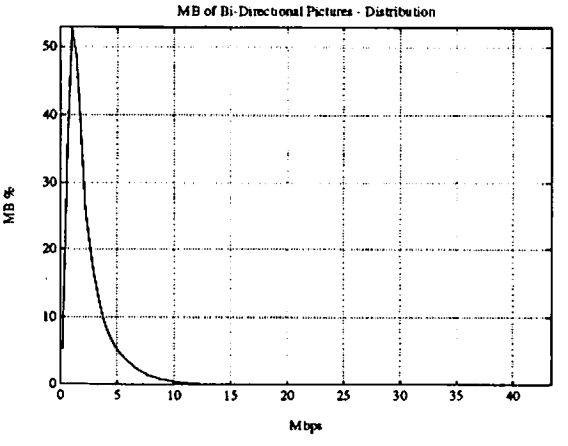

F11 : BR distribution - I pict ***Slice Level - TV programs***



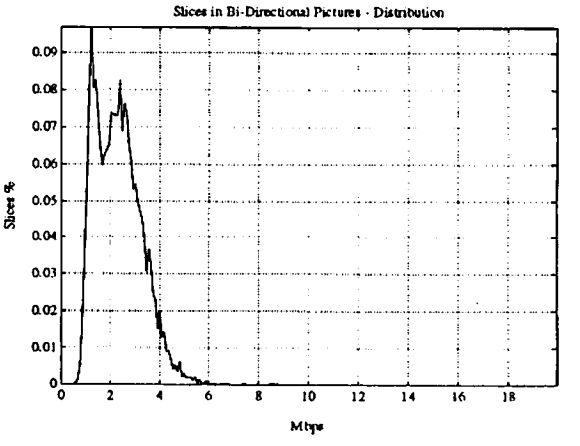

F12 : BR distribution - P pict ***MB Level - TV programs***



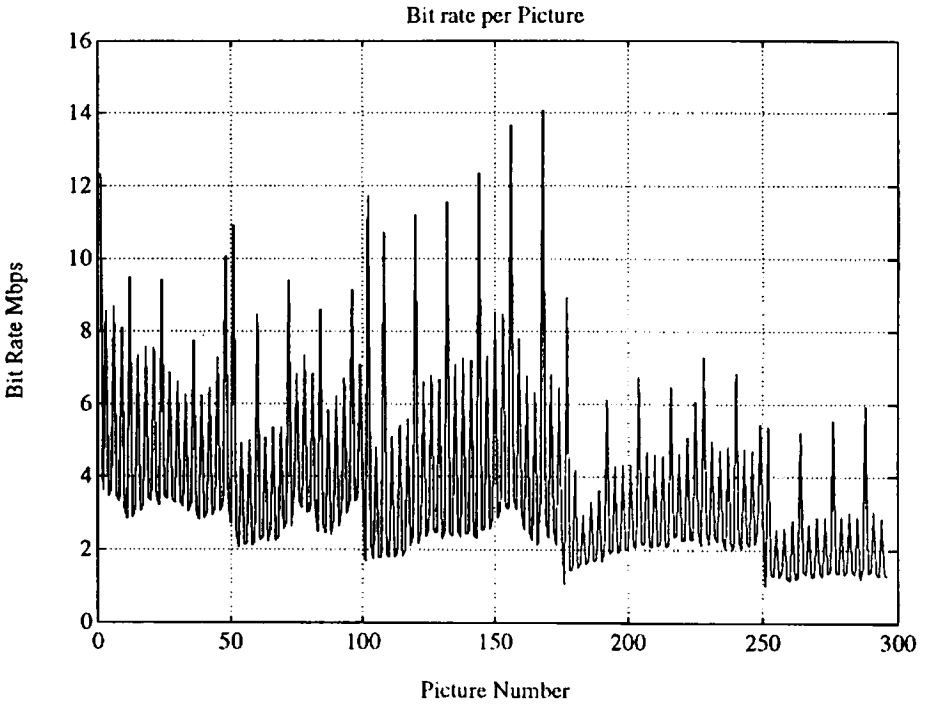

F13 : BR distribution - P pict ***Slice Level - TV programs***



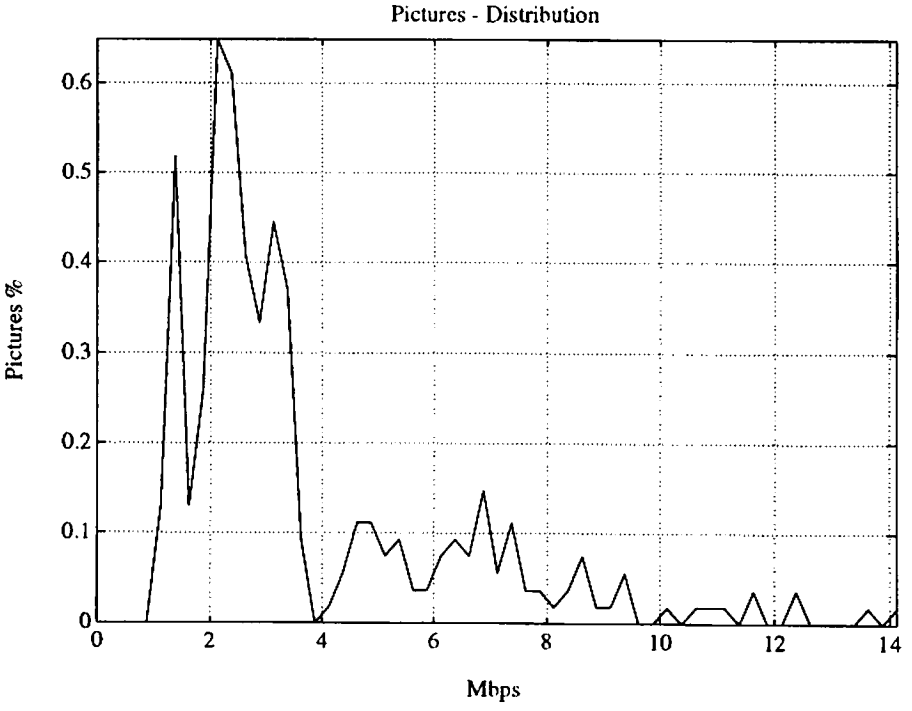

F14 : BR distribution - B pict ***MB Level - TV programs***




F15 : BR distribution - B pict ***Slice Level - TV programs***




F16 : Temporal evolution ***Picture Level - TV programs***




F17 : BR distribution - I,P and B pict ***Picture Level- TV programs***