THE SAMPLING OF MATERIAL OBJECTS

Theory and Practice

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FIRST PART

PLAN OF THE COURSE

STAP 2000

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THEORY OF SAMPLING PROPER

1. **INTRODUCTION** : When and why does one sample.
2. **THE STATISTICS OF SETS OF UNITS**
   - **FOUR BRANCHES**. Two criteria are to be taken into consideration.

- Units are **Ordered or Non-Ordered**.
- Unit Mass is **Uniform or Non-Uniform**.

3. DEFINITIONS AND NOTATIONS :
Basic vocabulary of the sampling theory.

4. QUALITATIVE APPROACH : Definition & properties of a **« representative »** sample

5. QUANTITATIVE APPROACH ♦ ZERO-DIMENSIONAL BATCHES : quantitative properties of a 0-dim. representative sample

6. QUANTITATIVE APPROACH ♦ ONE-DIMENSIONAL BATCHES : quantitative properties of a 1-dim. representative sample

TECHNIQUES DERIVED FROM THE THEORY OF SAMPLING

7. PROPORTIONAL SAMPLING

How to estimate the mass of a flowing batch with **accuracy and reproducibility**

References : South-African platinum mines

8. BED-BLENDING

How to feed a plant or a device **with a uniform material** to increase efficiency.

References : Furnaces and kilns ; Lafarge Cements, Metallurgy, etc.