



# Women and Nuclear Physics Research in Italy

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on behalf of

**Il Comitato per le Pari Opportunità (CPO) dell' Istituto Nazionale di Fisica Nucleare (INFN)**  
***(The Equal Opportunity Committee of the Italian National Institute of Nuclear Physics)***

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# Equal Opportunity and Equal Treatment in the European Union

- Initially the treaty required member states to ensure equal pay for men and women for equal work. With the Treaty of Amsterdam (1999), a new legal basis has been introduced for measures on equal opportunities and equal treatment of men and women at work:
  - the Council can adopt positive measures to ensure that the principle is applied
  - the member states can also make specific concessions to allow men or women easier access to occupations when one sex is under-represented
- In the Treaty of Nice (2001), among other institutional questions, the Chart of Fundamental Rights has been tackled, and the fundamental principle of equality between women and men in any possible field has been clearly stated. The explicit adoption of measures to facilitate the under-represented sex

- The European Union promoted an official Equal Opportunity Policy, based on the *gender mainstreaming* strategy, known also as *mainstreaming gender perspectives*
- Gender mainstreaming is *"the process of assessing the implications for women and man of any planned action including legislation, policies, programmes, in any areas and at all level"*
  - it is a long-term strategic approach to fostering gender equality, complementary to equal treatment (in the law) and positive action measures
  - its purpose is the integration of gender equality into all systems, structures, processes, policies and programmes, organizations and into their culture, with the ultimate goal of achieving gender equality
- Gender mainstreaming tools include:
  - *equal treatment legislation*
  - *Gender Studies*: studies of gender impact on planned initiatives and activities, and a system of gender watch will be key points in evaluating critically positive actions and gender mainstreaming policies
  - *modernising human resources management*: transparency in appointment and promotion procedures, equal opportunity training to persons involved in recruitment and promotion procedures, appropriate indicators to measure merit and excellence
  - *gender pedagogy of some science education*
  - *work/life balance measures*

## ❖ In the European Union:

### ❖ no barrier to education:

- women are the majority of undergraduate population
- equal educational level of women and men is achieved: women are around the 50% of university students
- women are less than 1/3 of the Science and Engineering working force in EU, and only a tiny minority in top of academic hierarchy and scientific jobs

## ❖ In Italy <sup>(1)</sup>:

### ❖ the overall level of education has been constantly increasing in the last decade

### ❖ women perform better than men in university:

- higher number of women graduates: in 2001 women are the 55.6% of all graduates <sup>(2)</sup>
- women graduates in time and with the highest marks: 26.9% women, w.r.t. 17.7% men
- lower drop out rate: 10.3% women, 15.4% men

### ❖ disciplinary segregation still holds since a lower proportion of women is found in scientific and technical subjects: in 2001 women are <sup>(2)</sup>

- the 32% of graduates in Physics
- the 17% of graduates in Engineering
- the 78% of graduates in Humanities
- the 59.5% of graduates in Law
- the 55.9 of graduates in Medicine

1 EU, The Human Potential Programme – The Helsinki Group on Women and Science, report on “National Policies on Women and Science in Europe”

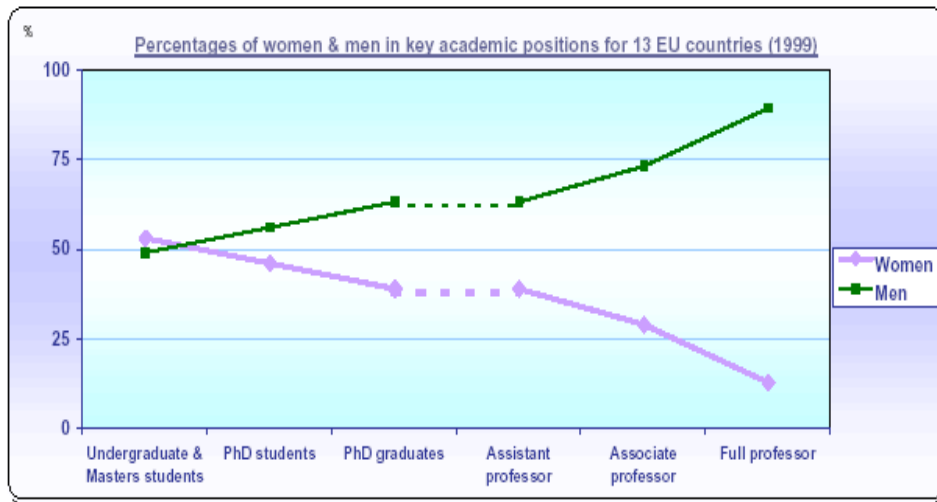
2 MIUR (the Italian Ministry of Education, University and Research), Data Statistics in <http://www.miur.it/ustat>

- Increasing concern at the EU level about the under-representation of women in scientific careers and the corresponding wastage of skill and knowledge; in 1999:
  - the European Commission adopted a Communication setting out an action plan to promote gender equality in science, and commissioned a European Technology Assessment Network (ETAN) report on women and science in the EU
  - the Research Council adopted a resolution on women and science inviting Member States to engage in dialogue and exchange views on national policies taking into account benchmarking and best practice
  - the Commission set up a working group on women and science of gender experts and civil servants of the 15 Member States and the 15 Countries associated with the 5th Framework Programme (FP) for research, known as "*the Helsinki Group on Women and Science*"
- The Helsinki Group on Women and Science:
  - promotes discussion and exchange of experience on measures and policies to encourage the participation of women in scientific career and research
  - provides national sex-disaggregated statistics and develop gender indicators to monitor the participation of women in the European Research
  - produced the first ETAN "*Report on Women and Science: promote excellence through mainstreaming gender equality*" on women in the scientific professions in Europe
- Based on the recommendations of the ETAN report, the 6th FP foresees an increasing integration of gender dimension at all level of implementations. The European Commission has published calls for tender in the following areas:
  - the continued development of work on statistics and indicators
  - a feasibility study on the European Platform of Women Scientists

- Statistical profiles of women in Italy in education and in research workforce
- The academic career of women in science in Italy and in the EU shows the typical "scissor" behaviour

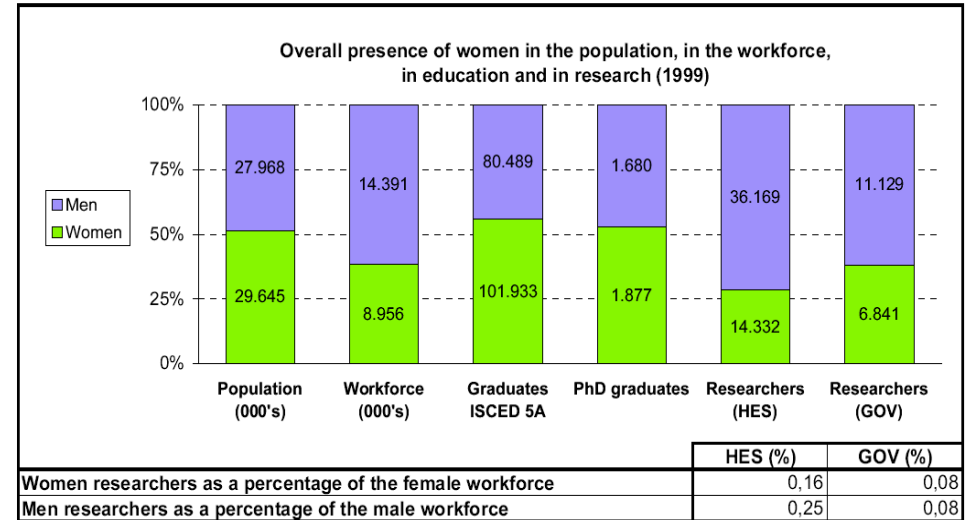
(data in "National Policies on Women and Science in Europe", report of the Helsinki Group on Women and Science)

An aggregated "Scissors Diagram" for the European Union

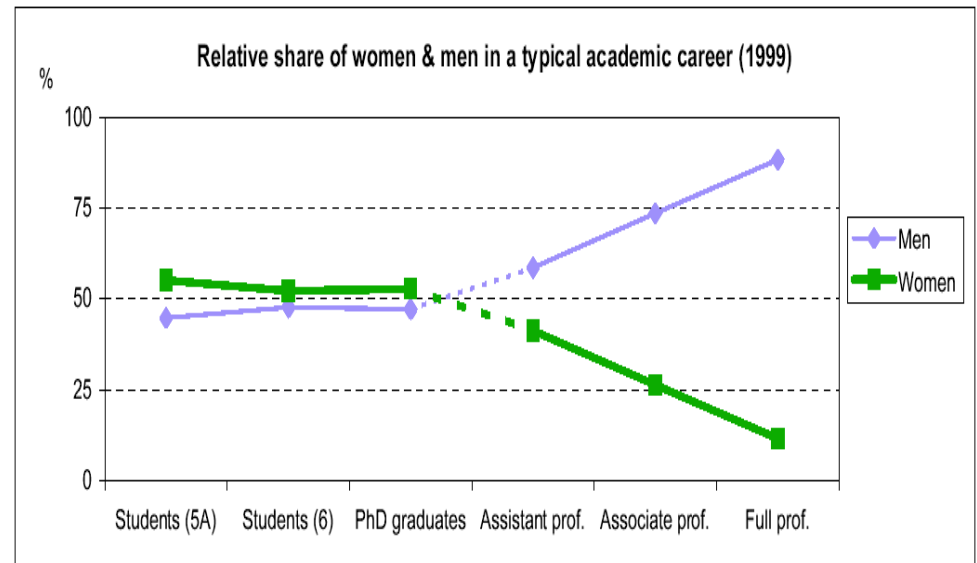


Exception to the reference year: EL (students), IE (PhD gr.): 97/98; BE-FR, BE-FL (PhD gr.), PT (PhD gr.), SE (PhD gr.): 99/00; EL (prof.): 1997; ES (prof.), IE (prof.), AT (prof.): 1998  
 EU except: DE (PhD students), LU, PT (professors)  
 Estimations from FTE data (professors): NL

## Italy

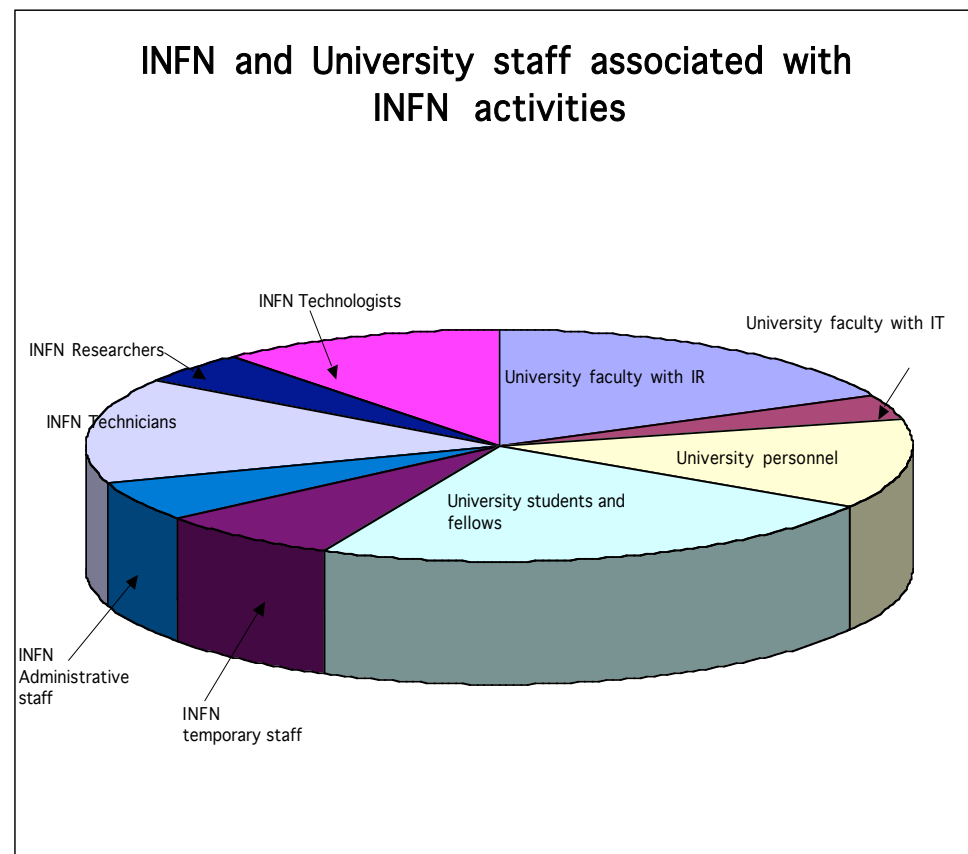


Exceptions to the reference year: graduates, 1998



Exceptions to the reference year: PhD graduates and students, 1998

- INFN is a public research institution funded by the Italian Government:
  - its annual budget is about 300 M€
  - it funds fundamental research, as well as university faculty, in nuclear, subnuclear and astroparticle physics
  - it employs researchers, technologists (accelerator physicists, computer experts, etc), technicians (mechanics, electronics, cryogenics, etc) and administrative personnel
- Public Research Institutions are especially well suited to perform gender studies based on the situation of women working in a wide range of profiles, positions and levels and to propose specific actions to overcome difficulties and segregation

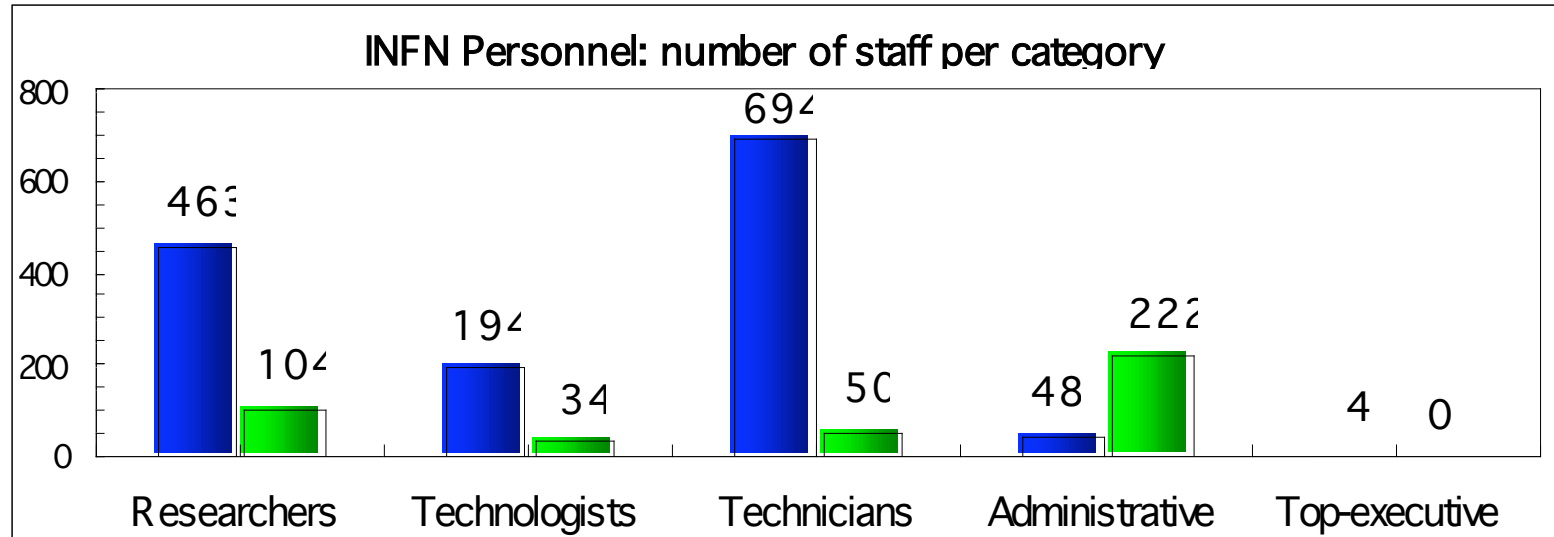


Women are 22.6% of all INFN personnel



- Equal Opportunity Committee, or "Comitati per le Pari Opportunità" (CPO) exist by law at Universities and public Research Institutions in Italy. They act as supporting mechanism to facilitate the implementation and enforcement of gender equality, and publish a yearly report on the status of women in the Institutions
- The **INFN Equal Opportunity Committee** was nominated in 1999, according to the requirements of collective agreements for Public Organizations in Italy
- The activity of the **INFN CPO** aims at:
  - analysing differences in the conditions, participation rates, access to resources and carrier's development, control of assets, decision making powers between women and men in the Institute
  - monitoring possible discriminations on the ground of sex, either directly or indirectly, among members of its personnel
  - proposing positive actions to the management intended to prevent, overcome and offset existing structural, organisational and cultural barriers to gender equality
- The Italian law requires **Affirmative Action Plans** to be approved and deployed by Public Organizations. In 2001 INFN adopted its own **Three-annual Affirmative Action Plan (2002-2004)**, based on an Equal Opportunity Programme proposed by the INFN CPO. This programme is founded on the systematic integration of gender equality into all policies and programmes of the Institute organization and culture, according to the **gender mainstreaming strategy** promoted by the European Union

## Gender Distribution of INFN Personnel (march 2002 data)

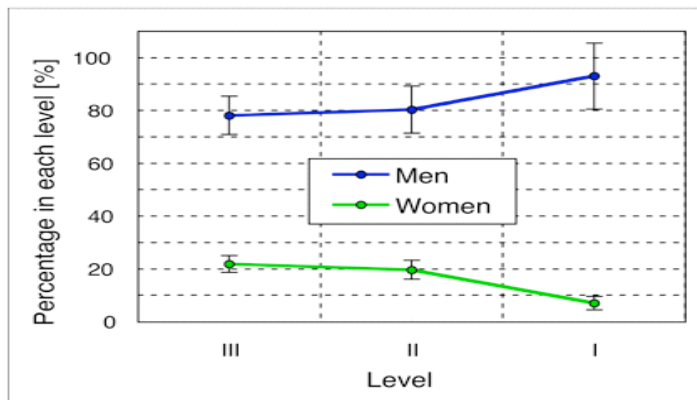


|                              | Total        | Women      | % Women     |
|------------------------------|--------------|------------|-------------|
| Researchers                  | 567          | 104        | 18.3        |
| Technologists                | 228          | 34         | 14.9        |
| Technicians                  | 744          | 50         | 6.7         |
| Administrative Staff         | 270          | 222        | 82.2        |
| Administrative Top Executive | 4            | 0          | 0.0         |
| <b>Total INFN</b>            | <b>1'813</b> | <b>410</b> | <b>22.6</b> |

INFN CPO Report - INFN/AM-02-01 (11/11/2002)

- Career development for INFN researchers and administrative staff: the "scissors" behavior shows evidence of the decrease of the female presence at the highest levels of the careers (march 2002 data).
- The lack of female managers is especially remarkable in administrative positions, where the number of women employed large

| Level | Total | Men | Women | % Women |
|-------|-------|-----|-------|---------|
| I     | 115   | 107 | 8     | 7.0     |
| II    | 183   | 147 | 36    | 19.7    |
| III   | 266   | 208 | 58    | 21.8    |
| Total | 564   | 462 | 102   | 18.1    |



| MANAGERS |       |     |       |         |
|----------|-------|-----|-------|---------|
| Level    | Total | Men | Women | % Women |
| I        | 1     | 1   | 0     | 0.0     |
| II       | 3     | 3   | 0     | 0.0     |
| Total    | 4     | 4   | 0     | 0.0     |

| ADMINISTRATIVE STAFF |       |     |       |         |
|----------------------|-------|-----|-------|---------|
| DIRECTORS            |       |     |       |         |
|                      | Total | Men | Women | % Women |
|                      | 4     | 2   | 2     | 50.0    |

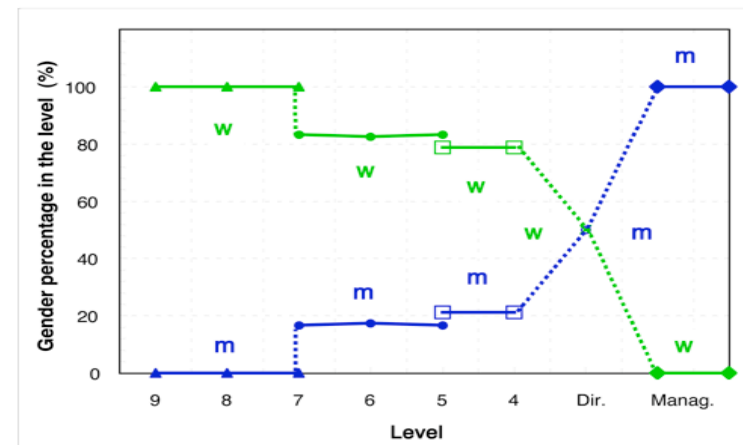
| OFFICIALS |       |     |       |         |
|-----------|-------|-----|-------|---------|
| Level     | Total | Men | Women | % Women |
| IV        | 33    | 7   | 26    | 78.8    |
| V         | 33    | 7   | 26    | 78.8    |

| COLLABORATORS |       |     |       |         |
|---------------|-------|-----|-------|---------|
| Level         | Total | Men | Women | % Women |
| V             | 36    | 6   | 30    | 83.3    |
| VI            | 46    | 8   | 38    | 82.6    |
| VII           | 108   | 18  | 90    | 83.3    |

| OPERATORS   |       |     |       |         |
|-------------|-------|-----|-------|---------|
| Level       | Total | Men | Women | % Women |
| VII         | 2     | 0   | 2     | 100.0   |
| VIII        | 4     | 0   | 4     | 100.0   |
| IX          | 4     | 0   | 4     | 100.0   |
| Tot. ADMIN. | 270   | 48  | 222   | 82.2    |



# INFN: women in management and consultative bodies

- Percentages of women in the principal INFN management and consultative bodies (march 2002 data)

- Appointed body:** directly nominated by the INFN President
- Elective body:** members chosen by and within the research personnel by elections held in each INFN unit
  - a relatively high percentage of women is elected as members of the Scientific Committees (no grants)
- the appointment of women for responsibility tasks acknowledged with monetary grants (and useful also for the career development) is limited to a low 8.3% of the available positions

|   | Total | Women | %Women |
|---|-------|-------|--------|
| <b>APPOINTED BODIES</b>   |       |       |        |
| President and Executive Board                                   | 5     | 0     | 0      |
| Management Board (includes President and Executive Board)*      | 35    | 0     | 0      |
| Scientific and technical commissions (computing, training, etc) | 60    | 9     | 15.0   |
| Social, cultural and assistance Commissions, plus CPO           | 73    | 30    | 41.1   |
| <b>ELECTIVE BODIES</b>  |       |       |        |
| National Scientific Commissions                                 | 108   | 20    | 18.5   |
| Personnel representatives                                       | 111   | 20    | 18.0   |

\* Late in 2002 one woman has been appointed by the Italian Government as a representative of a Ministry

- Recruitment and promotion of the personnel:
  - is a very important aspect of the management of the Institute
  - is performed via national competitions directed by special Commissions appointed by the INFN Management Board
- Italian law requires hiring committees in Public Organizations to be composed by 30% of women:
  - in INFN panels for hiring and promotion of physics personnel this has been achieved only very recently
- Remarkable improvements have been observed mostly thanks to the CPO effort, which, since its nomination, brought this point to the attention of the management
- The law does not directly refer to personnel recruitment for temporary positions:
  - a possible adoption of the norm, even if not strictly required by law, is proposed by the CPO, consistently with the concept that an equal opportunity policy must apply to all of the phases of the professional curriculum

- Both cultural and organizational actions are needed to rule out difficulties in career development, disproportionate gender distribution in leading administrative and research positions, and to encourage the young women to undertake and pursue scientific and technical professions
- The **INFN Equal Opportunity Programme** according to the approved **Three-annual Affirmative Action Plan** and the activity of the **INFN CPO** can be grouped into the following main categories:
  - ❖ statistical informations
  - ❖ awareness
  - ❖ transparency in management
  - ❖ work to home-life balance
  - ❖ work enviroment

## Statistical informations

- ❖ sex-disaggregated statistics are important tools in gender studies, with the purpose of investigating and creating a better understanding of the complexities of direct, indirect and institutional discriminations. Statistical information and gender distributions of INFN Personnel can be found in CPO annual reports and in the Committee web page <http://www.infn.it/cpo/welcome.html>

## Awareness

- ❖ a key point of the programme aims at an increased awareness to be gradually achieved over the years thanks to the publication of INFN Equal Opportunity policy in the form of leaflets, articles in the INFN journal, and reports, organization of conferences and workshops on specific topics, sustained contacts with other Organizations and external bodies. Attention is also given to specific actions proposed to ensure an increased involvement of women in training courses

## Transparency in management

- ❖ an internal policy of clearness in all useful information on INFN structure and its personnel, listed according to gender, is pursued:
  - easy access to professional data, both for staff and associate members, will be achieved thanks to a new organization of INFN data in electronic database published in the official INFN Internet web site
  - information about committee compositions, design and contents of vacancy notices, application form and procedures as well as interview and selection processes and membership of related boards should also be available
- ❖ special emphasis is given to the creation of a *Database of Competences* to collect curricula and qualifications of INFN staff and associated personnel:
  - this database should be spontaneously filled by personnel members
  - the information therein contained should be used to evaluate competences of INFN personnel in order to reduce gender gap between position



## Work to Home-Life balance

- ❖ CPO proposes some solutions to ease reconciliation between personal and professional life:
  - pilot projects of part-time work from home and working time flexibility
  - investigation on availability of child-minding and nursery facilities
  - special economical support for child care also in case of short term contracts
  - investigation of specific gender disease to be possibly taken into account in the periodic medical checks foreseen for INFN personnel
  - developing career-break schemes and policies to accommodate the needs of employees returning after a career break
- ❖ attention is also given to awareness in this field aiming at a cultural evolution towards the harmonization for men and women among professional and familiar duties: a training

## Work environment

- ❖ Threatening the personal respect and dignity of a person can have the worst consequences. There should be, in the work environment, the widest and deepest awareness that such behaviours are unacceptable and perpetrators should be sanctioned up to the termination of the contract
- ❖ Internal rules and procedures governing complaints of harassment and mobbing, to be resolved by a combination of informal mediation, mediation with an administrative record and/or the initiation of disciplinary action have been proposed by the INFN CPO in a "*Behaviour Code in INFN*" or "*Codice di Comportamento per la tutela della dignità delle persone che lavorano ed operano all'interno dell'INFN*"

- The European Union explicit Equal Opportunity Policy is the evidence of a serious concern over the under-representation of women in many occupational fields for many years
- There are still barriers to women realizing their potential in science and technology
- Anomalies in job opportunity, career development and responsibility share of women represent in general a cultural problem
- Society must fully exploit its human resource capital: women can contribute to the scientific research as well as in any other field in all countries within a framework where their capabilities are fully recognised and gender differences exploited
- Gender equality principles and their practical applications are a fundamental issue for the future development of humanity: it is not only a matter of justice and fundamental rights, but